

PHENIX WEEKLY PLANNING



2/25/2010
Don Lynch

Ongoing Tasks for Run 10

Task

Start Date

End Date

Install rack components in RPC3 N racks

in progress

6/1/2010

Attach cables to RPC3 N racks and to Detector $\frac{1}{2}$ octants

in progress

6/1/2010

Install blower for RPC3N thermal control

Done

Done

Send mass flowmeters out for recalibration (DC/PC, MuID, TOF.W)

In Progress

?

AH Crane 110 switch for lockout

In Progress

6/30/09

PHENIX Startup Checklist Status

Item

Responsibility

Status

Item 1: ESRC relevant items completed

Wood Stairs

Phillips

Post Start

Update Work procedures

Cirnigliaro, Lynch

Post Start

Item 4: HBD Mock Up

Lynch

After Run 10

Item 11: Fire Pull Box

Philips

Post Start

Item 12: Dumb Waiter

Lynch

Almost Almost
Almost there

2/25/2010

Maintenance access yesterday

- RPC electronics tasks continued
- RPC3S above MuID support clearances checked O.K.
- RPC3S south tunnel electrician work walked down with CB and Mike Rau
- EC equipment lift sort-of checked out by Steve Kane. Need to do a load test next access (get 250 lbs for test). He may have other requests (change support bolt, more analyses, etc., etc., etc. Hope to be able to use lift after next access day.
- MuTrigger TLD's swapped.
- West carriage roller maintenance
- RICH replaced one ERT board
- TOF E. replaced one FEM
- TOF W: now one FEM short
- TEC: recovered bad sector

New BP planning meeting tomorrow

RPC3S $\frac{1}{2}$ octant sheels received

TECHNICAL SUPPORT 2010

Next Week:

No scheduled maintenance (Next Scheduled Maintenance Wed. 3/10).

Run 10 tech support as necessary

2010 summer shutdown prep continues

Future upgrade support as necessary

Arrange for $\frac{1}{2}$ octant pre-survey

TECHNICAL SUPPORT 2010

2010 Tasks

TECHNICAL SUPPORT 2010

	Start Date	End Date
Run 10	In progress	6/1
VTX Fabrication and Installation Plan (1st Draft)	Done	Done
RPC3 South Fabrication and Installation Plan (1 st Draft)	Done	Done
Receive New Beampipe	On Order	2/26
Design Beam pipe supports	In progress	2/26
Update RPC3 N design for RPC3 S	In progress	2/26
Design support structure, alignment scheme for VTX	In progress	2/26
Specify and procure electronics racks and support equipment for VTX	3/1	5/31
Fabricate beam pipe supports	2/19	5/1
Beampipe NEG coating (CERN)	2/1	5/1
Fabricate/procure parts for RPC3 S installation	3/1	5/1
Fabricate/procure parts for VTX installation	3/1	6/1
End of run 10	6/1	6/1
Prep IR for shutdown	6/1	7/1
Complete unfinished business for MuTrgr FEE & RPC3 North	6/1	8/1
Install Beam pipe	7/1	10/1
Install VTX	8/1	10/1
Install RPC3 South	6/1	10/1
2010 Shutdown Other Tasks	6/1	11/1

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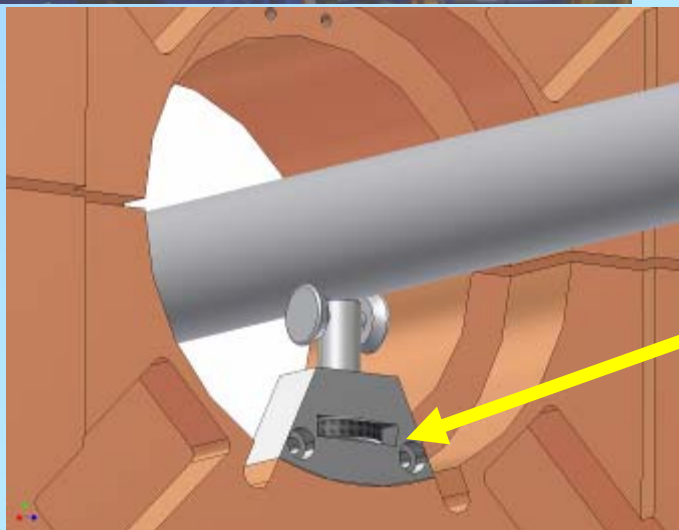
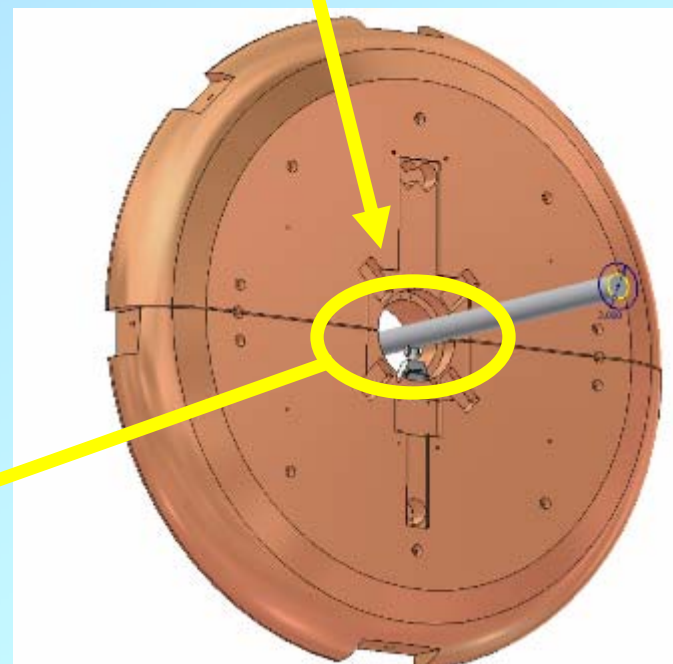
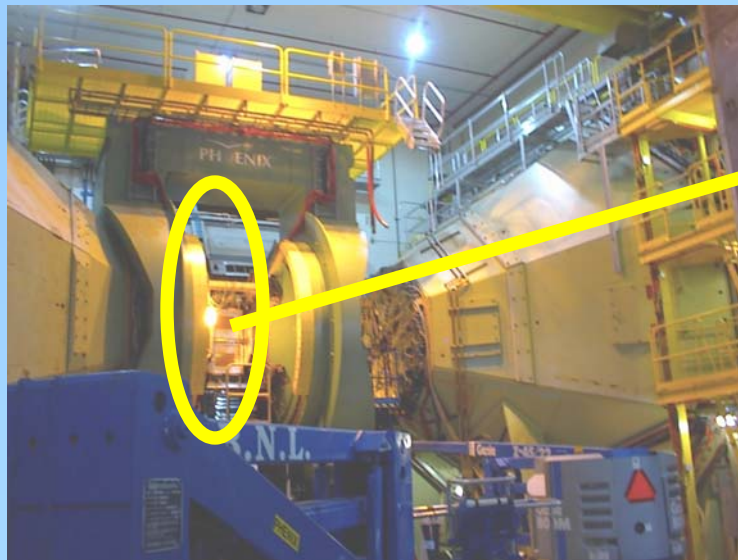
New Beampipe Pre-Shutdown Prep

TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Design central beam pipe and new transition sections	Done	
Order beampipe	Done	Brush Wellman
Order new design transitions	Done	CAD
Order replacements for existing transitions and spools	Done	CS
Conceptual and mechanical design beampipe supports	Done	Done
Beampipe fabrication	2/26/2010	Delayed to 3/3?
Receive bp and all beampipe sections	2/26/2010	CAD
Beampipe Installation Review (Preliminary)	2/26/2010	To Be Scheduled
Bp and sections acceptance tests and inspection	3/14/2010	
Send beampipe to CERN for NEG Coating	3/15/2010	
Fabricate beampipe supports	5/31/2010	
Receive bp back at BNL	5/31/2010	
Choreograph removal of old beampipe and installation of new (final)	6/1/2010	
Final acceptance and inspection bp and sections	6/15/2010	
Test and inspect beampipe supports	6/15/2010	
Beampipe Installation Review (Final)	6/15/2010	

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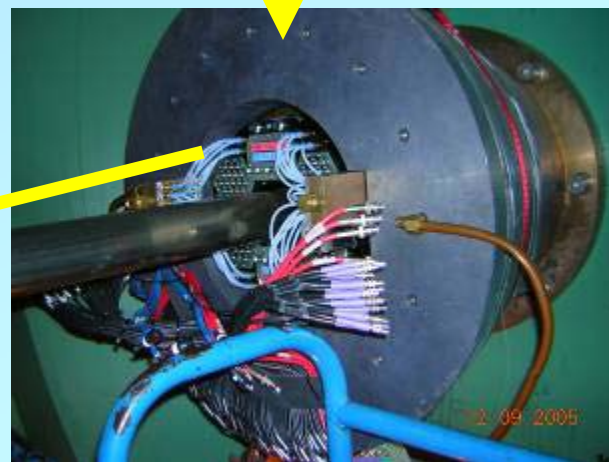
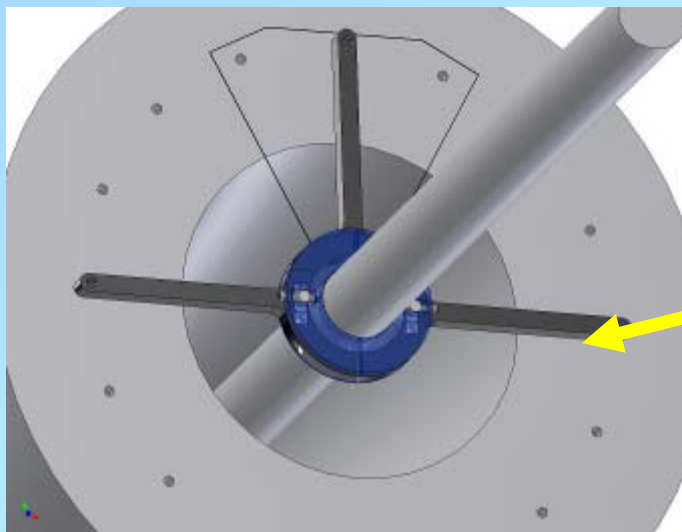
CM central BP supports (2 req'd)

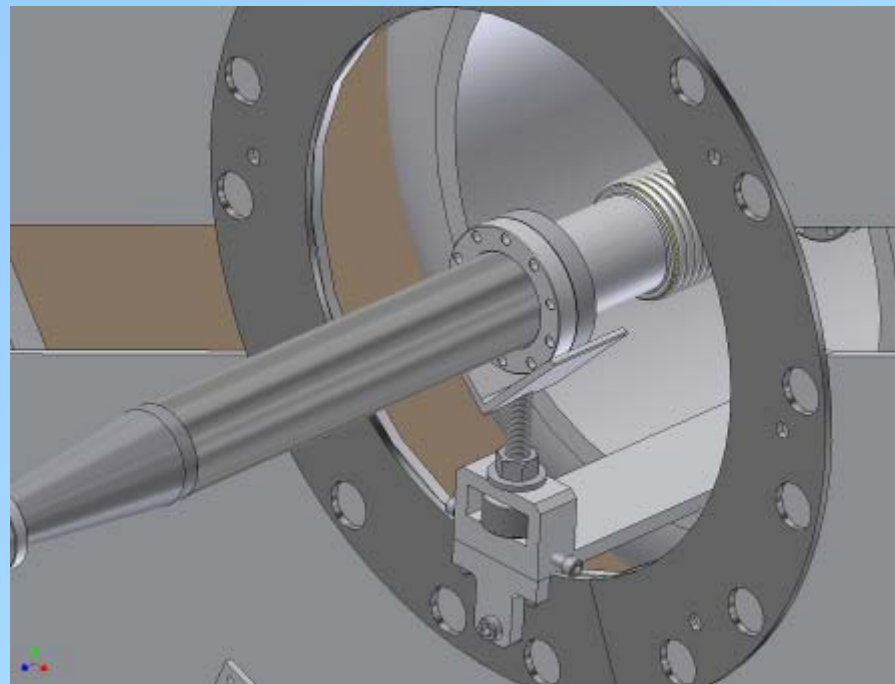


TECHNICAL SUPPORT NO-0

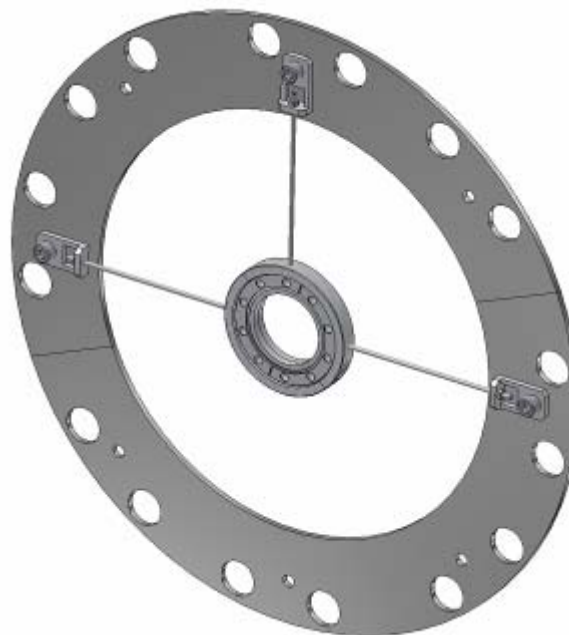
South Flowerpot BP support

TECHNICAL SUPPORT NO-0





North MPC Cavity BP support



TECHNICAL SUPPORT NO-0

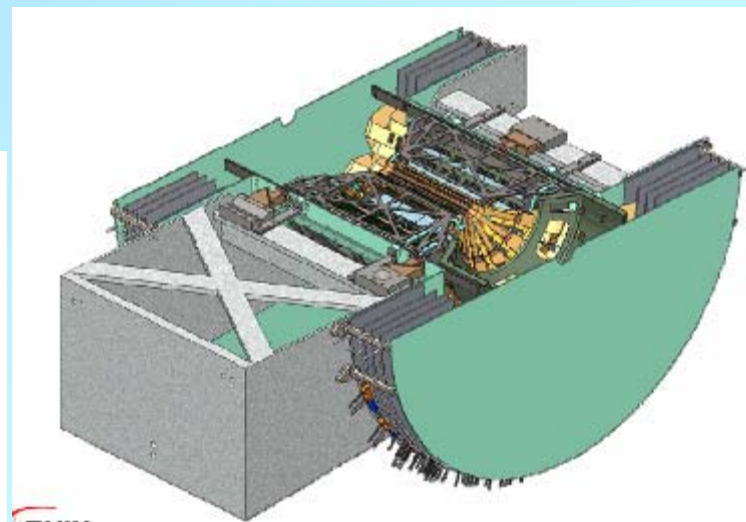
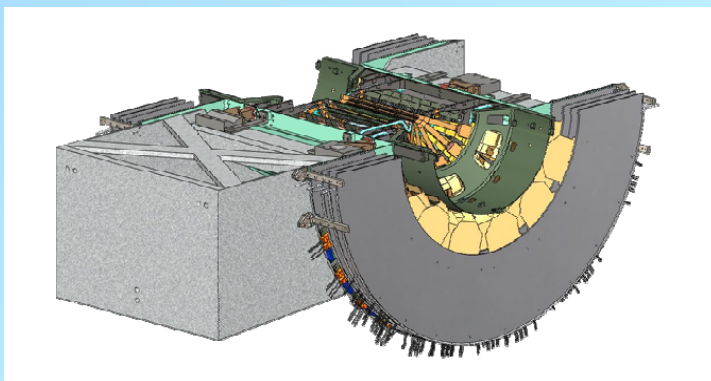
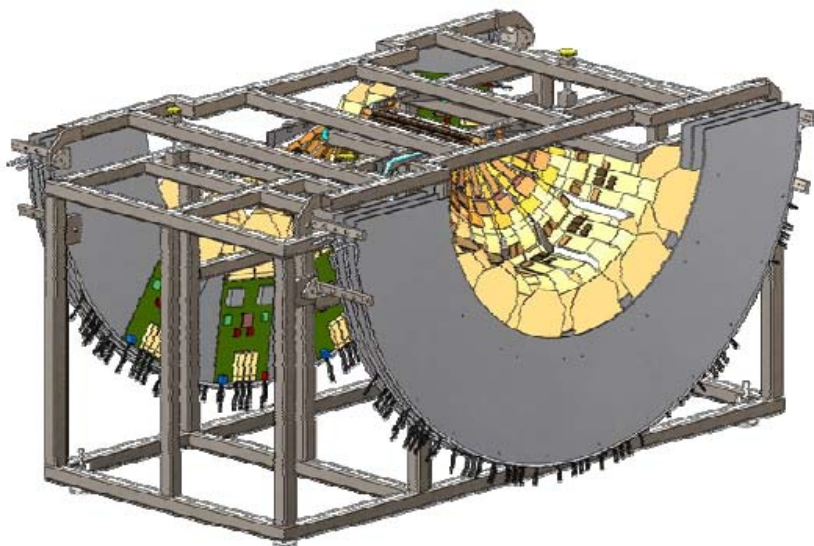
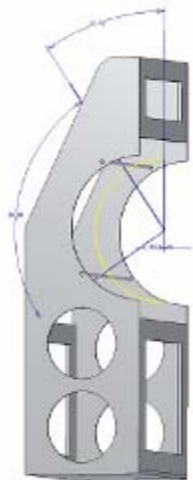
VTX Subassembly, Top Assembly, Installation and Integration Prep

TECHNICAL SUPPORT 2010

Task	Due By	NOTES
Design assembly workspace, tools and fixtures	Done	Fixtures designed by PHENIX →
Fabricate/prepare assembly workspace, tools and fixtures	Done	Fixtures designed by PHENIX Done →
Receive, inspect, test, rework and qualify assembly tools and fixtures	Done	Fixtures designed by PHENIX Done →
Design assembly workspace, tools and fixtures	Done	VTX Group →
Fabricate assembly workspace, tools and fixtures	3/31/2010	PHENIX →
Conceptual and mechanical design of installation, structural support and detector alignment, including station 1 work platforms	2/26/2010	→
Installation Review (ESRC)	~3/15/2010	→
Beampipe & VTX Installation Work Permits	5/31/2010	→
Subassemblies complete ready for integration into hemispheres	6/30/2010	→
Receive, inspect, test, rework and qualify assembly tools and fixtures, electronics racks and support	6/30/2010	VTX Group
Fabricate/procure detail components for installation, support and alignment, including station 1 work platforms	6/30/2010	→
Design & fabricate fixtures, techniques and mockups for installation and alignment	6/30/2010	→
Receive & inspect components (installation, support & alignment)	7/15/2010	→
Assemble Hemispheres	7/15/2010	→
Mock installations/alignments on bench and in IR	7/31/2010	↓

2/25/2010

VTX Support Structure Base Assembly Design In Progress



TECHNICAL SUPPORT NO-0

RPC3 Pre Shutdown Prep

TECHNICAL SUPPORT 2010

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Review RPC3 North for Lessons Learned	Done	
Make a list of all purchased and fabricated parts	Done	
Place order for CS fabricated parts	Done	
Implement design improvements for RPC3 South	Done	
Receive and inspect 1/2-octant shells	Done	
Order raw materials for PHENIX fabricated parts	3/15/2010	
Order purchased parts for RPC3 South	3/15/2010	
Prepare Installation Plan	3/15/2010	
pre-survey 1/2 octant shells	3/19/2010	
Fabricate PHENIX parts	5/14/2010	
Receive and inspect CS fabricated parts	5/28/2010	
Prepare work permit for installation	6/1/2010	
Receive purchased parts	6/4/2010	
Assemble, test and burn-in 1/2 octants	6/18/2010	
Pre-Assemble base components at PHENIX	6/25/2010	

2/25/2010

Start of Shutdown

TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
End of Run 10	5/31/2010	
Purge Gas From Detectors	6/4/2010	
DAQ Tests	6/4/2010	
Close North and South BP gate valves and lock closed for until new BP is installed	6/4/2010	
Open and disassemble wall	6/11/2010	
Remove EC ladder and fold platforms	6/11/2010	
Remove BP Collar	6/11/2010	
Move MMS south	6/14/2010	
Prep EC for move to EC	6/18/2010	
Move EC to AH	6/25/2010	
Install cart	6/28/2010	
Move Collars to AH	6/28/2010	
Install decking	6/29/2010	
Install Manlift	6/29/2010	
Remove RPC2 Prototype, support brackets, cabling & Piping	6/29/2010	
Remove MMS east vertical lampshade	6/30/2010	May be deleted

2/25/2010

Beampipe De-installation

TECHNICAL SUPPORT 2010

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Remove HBD's and HBD cables Remove RXNP's and cables	7/9/2010	Concurrent with Start of shutdown tasks
Remove MPC's	7/16/2010	Concurrent w MPC's
Remove BBC's	7/16/2010	Concurrent with BBC's
Position MMS for Vacuum break	7/19/2010	
Install Temporary supports for old BP	7/19/2010	Supports TBD
Break vacuum on north side of MMS	7/19/2010	
Remove south bellows	7/19/2010	
Move MMS north, remove spool and south3-5 transition	7/20/2010	
Move the MMS south & Prep MMS for move to AH	7/23/2010	Begin MMS prep with shutdown start
Move CM south, remove north bellows	7/23/2010	
Move old Be bp south into MMS and move CM north	7/23/2010	
Move MMS to shutdown park position	7/23/2010	
Remove old Be BP	7/23/2010	
Move CM south and east	7/23/2010	
Remove north 3 to 5 transition	7/23/2010	

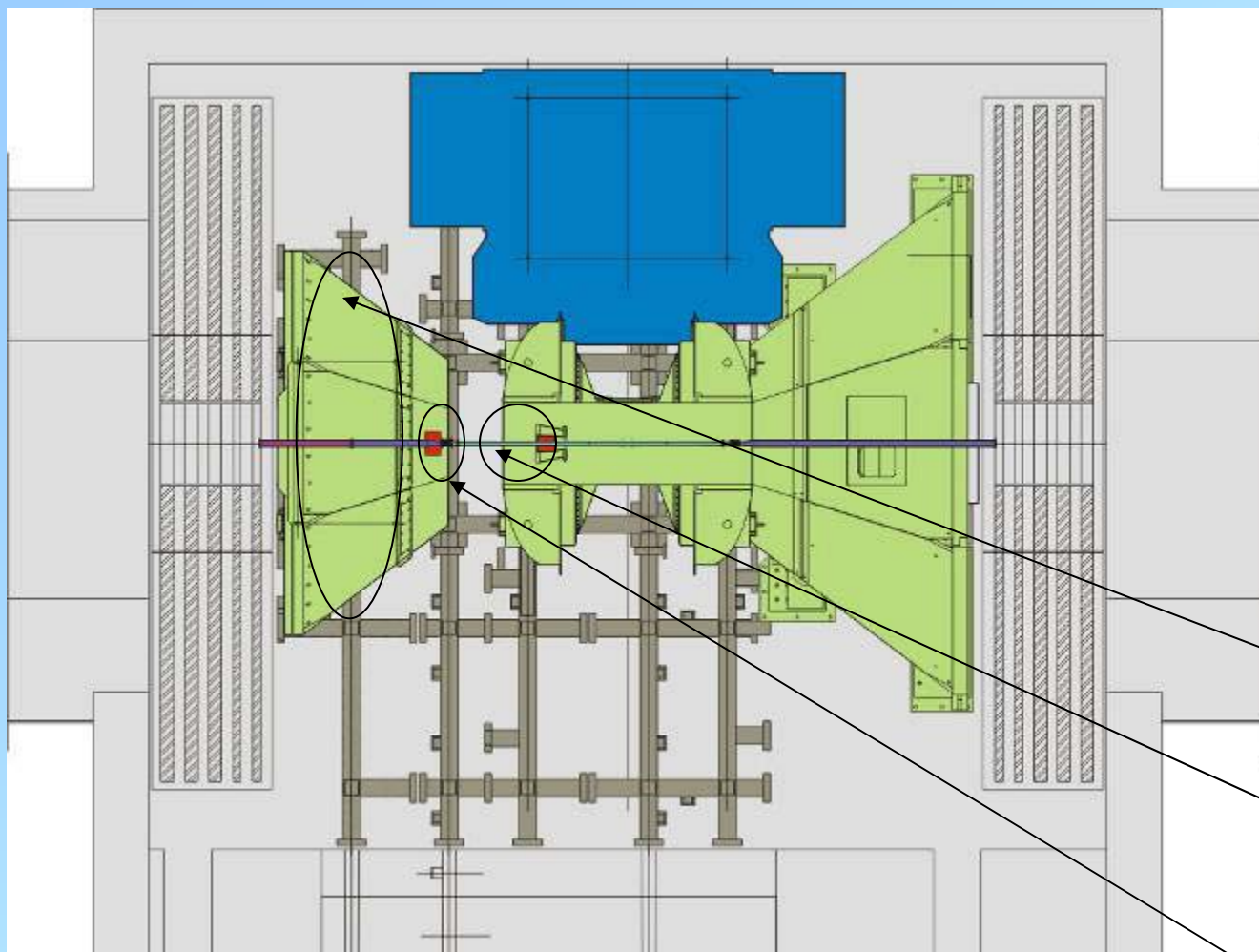
New Beampipe installation



TECHNICAL SUPPORT NO-0

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Prepare north 3 to 5 transition for installation with roller guides, bakeout wrap and thermocouples	7/23/2010	CAD
Install north 3 to 5 transition in MMN	7/30/2010	
Install new Be pipe in CM on temp supports	7/30/2010	
Move CM back to beamline & connect new Be BP to 1-5/8 transition and bellows and north 3-5 transition	7/30/2010	
Move CM to run position	7/30/2010	
Prealign Be/Alum pipe with transitions attached on new BP supports At MPC north, BBC south and north nosecone	7/30/2010	
Prepare south 3 to 5 transition for installation with roller guides, bakeout wrap and thermocouples	7/30/2010	
Install south 3 to 5 transition, bellows and 1-5/8 to 3" transition in MMS	8/4/2010	
Move MMS back into IR on beamline	8/4/2010	
Move CM south, slide Transition assembly in MMS north and connect to new Be BP	8/4/2010	
Move CM and MMS north and install south spool. Leak check. Move MMS South	8/4/2010	
Install temporary bakeout supports	8/4/2010	
Install bakeout blankets and monitoring	8/4/2010	
Bakeout New BP and activate NEG coating	8/27/2010	How Long?
Leak check BP	8/27/2010	
Re-install MPC's including Cables and services Re-install BBC's including Cables and services	9/10/2010	Concurrent efforts
Move CM to run position	9/10/2010	
Final alignment of new BP	10/1/2010	

2/25/2010

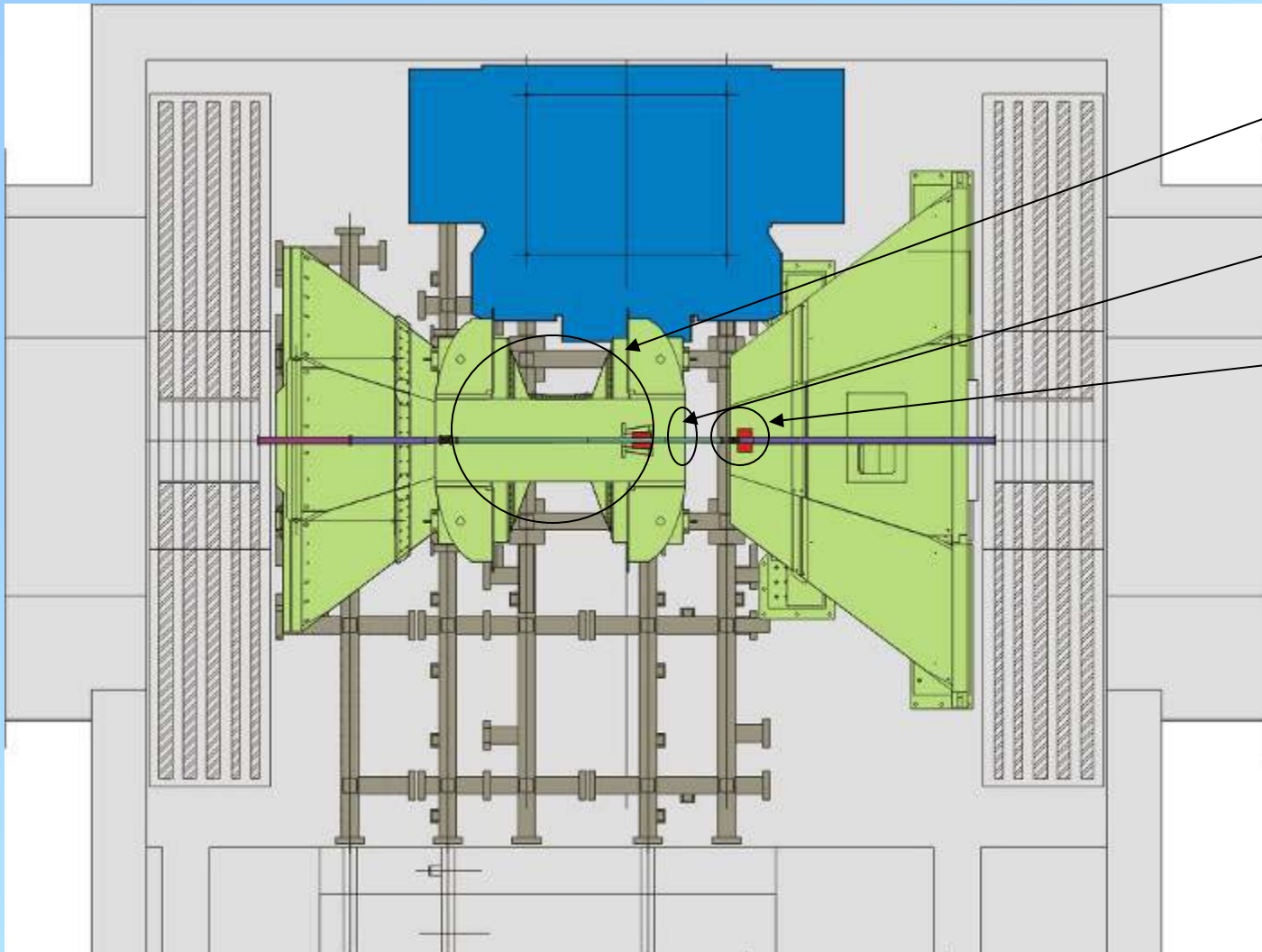


After normal shutdown tasks including removing the MuID collars, moving the EC to the AH and all other shutdown prep activities, we will be ready to remove the existing beampipe.

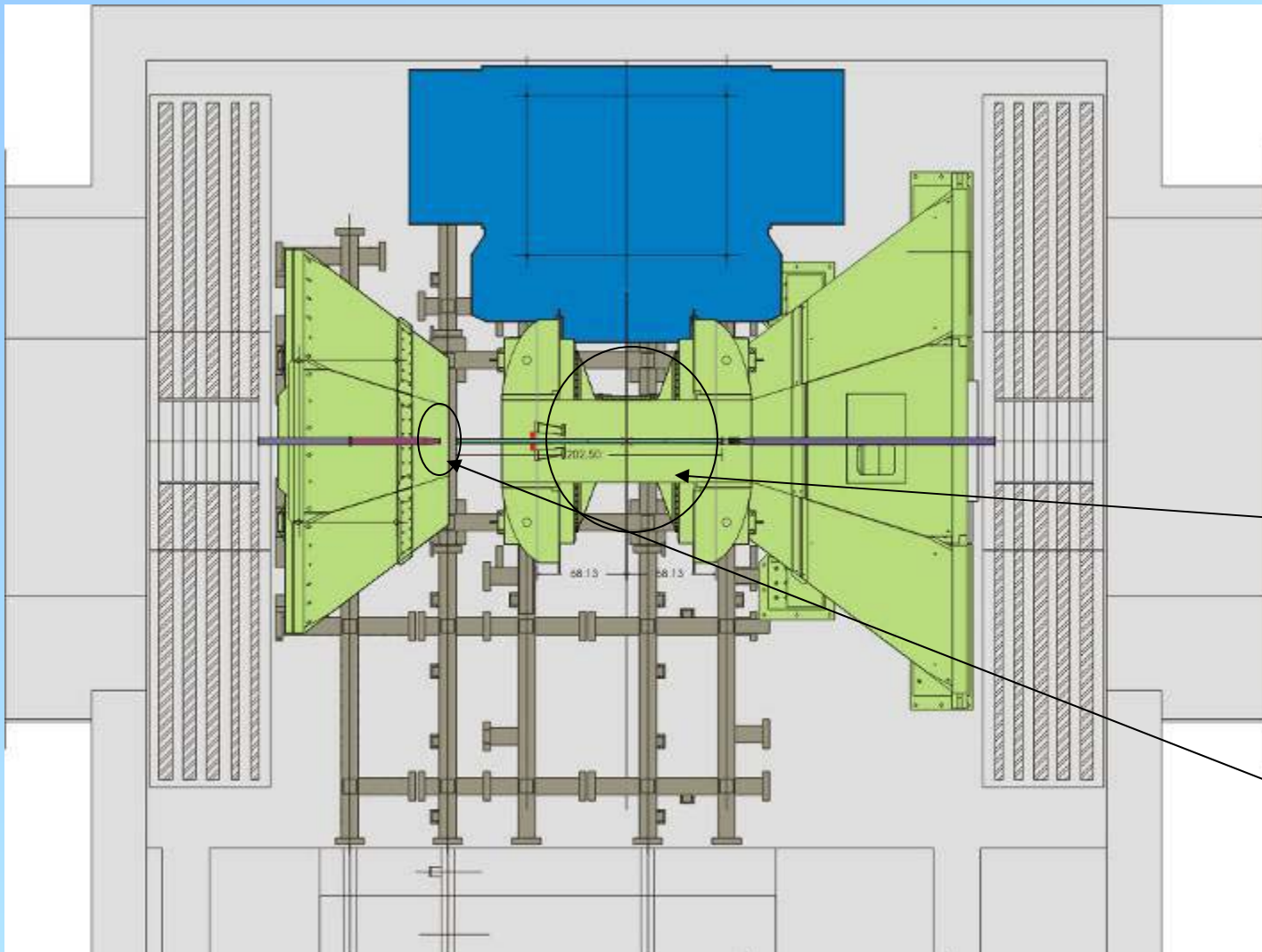
Step 1
A. move the MMS south.

B. Remove the south MPC

C. remove the south BBC.



- Step 2
- A. move the CM south.
 - B. Remove the south MPC
 - C. remove the south BBC.

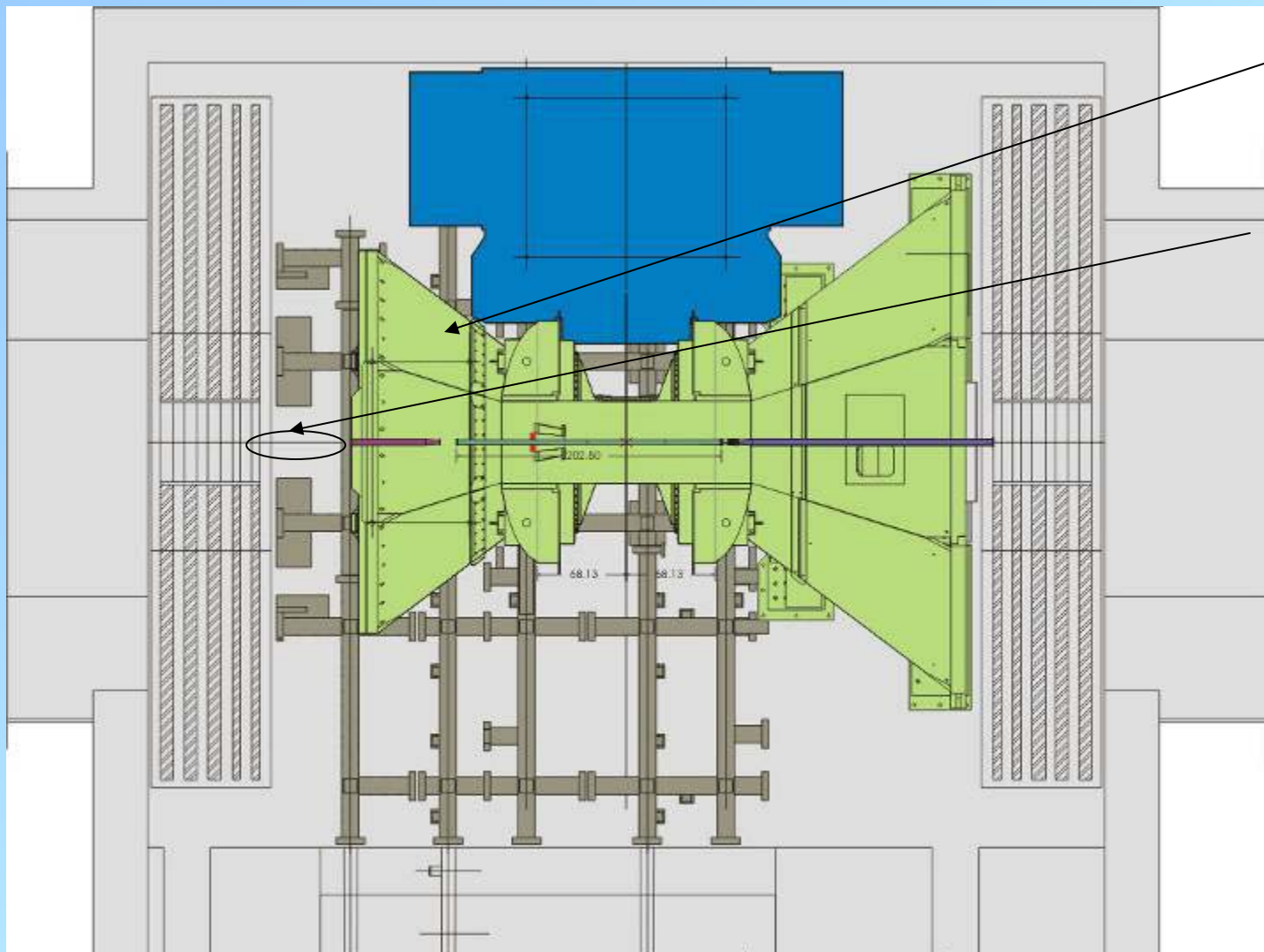


Step 3
A. move the CM
to run position.

B. Bleed up to
atm.

C. Remove the
south bellows

Step 4



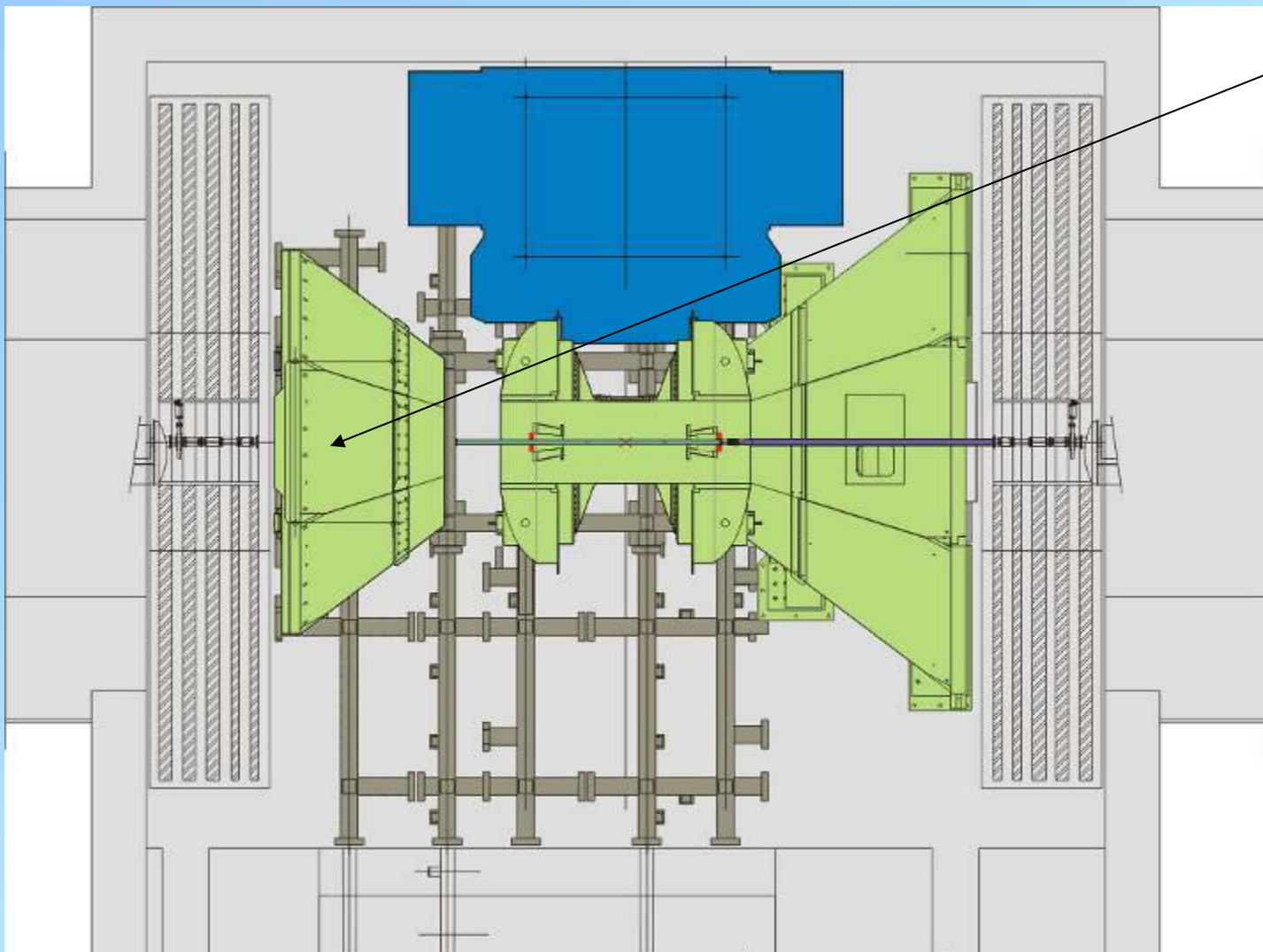
A. move the MMS north.

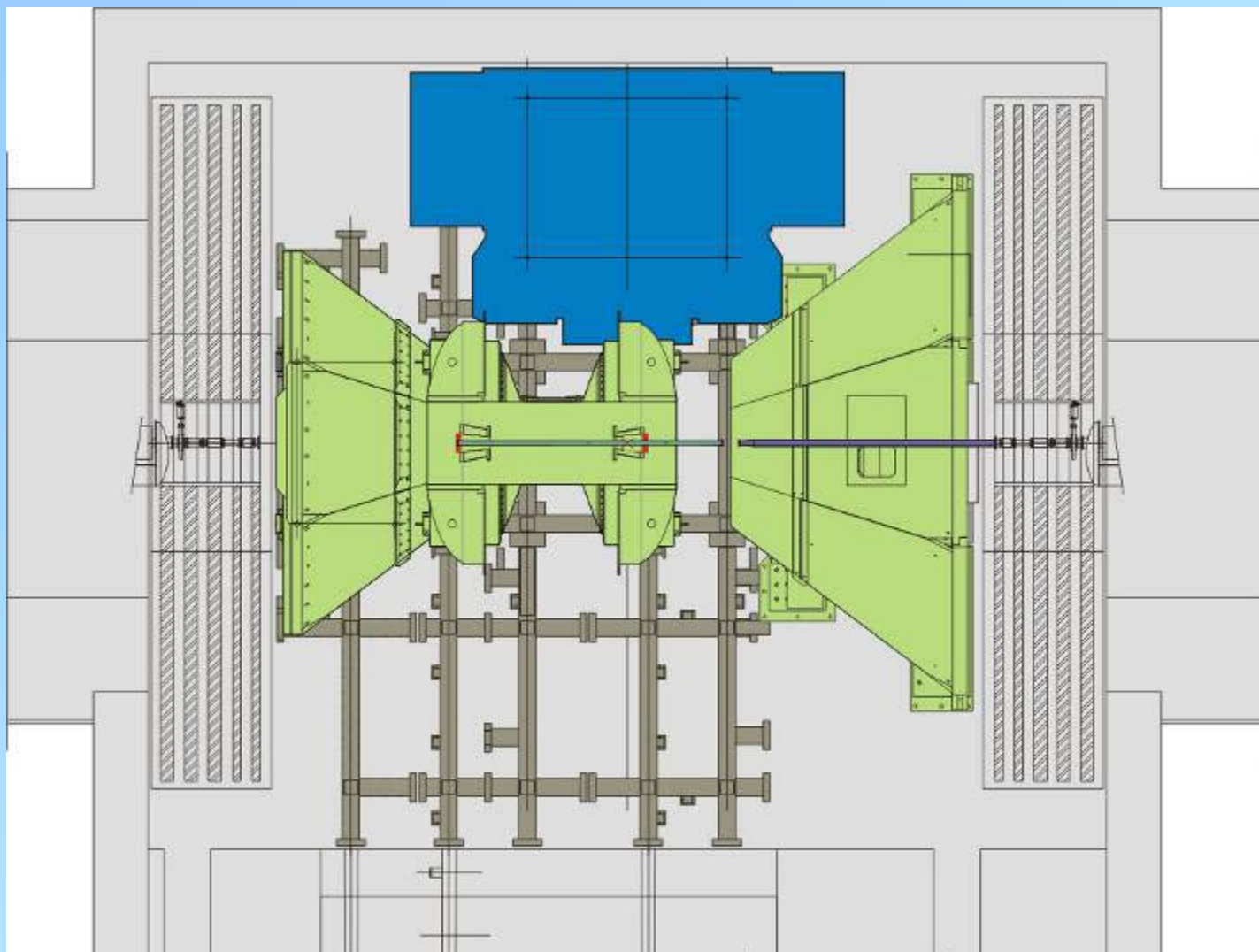
B. Remove the south spool section

C. remove the south 3\"-5\" transition.

Step 5

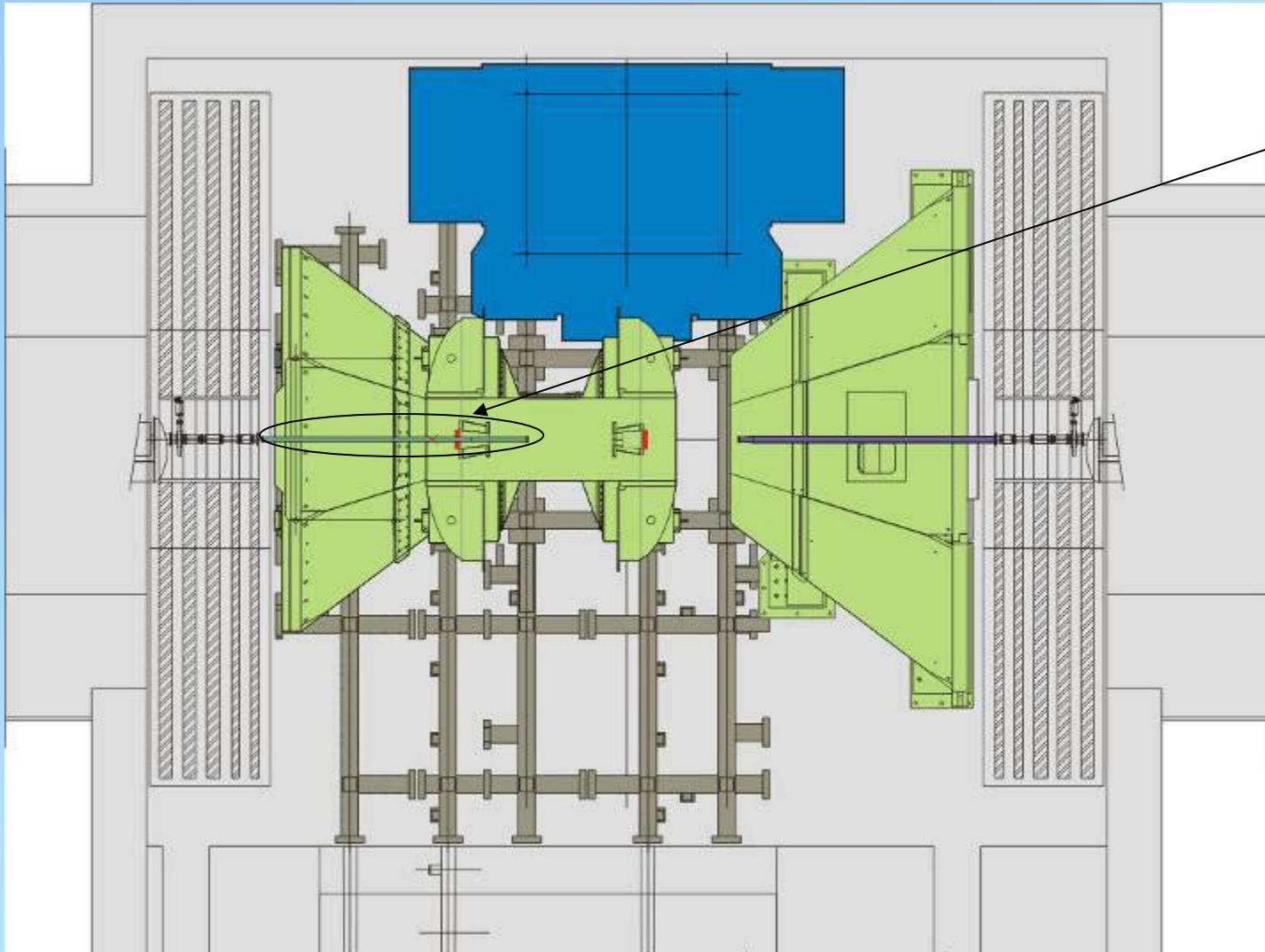
Move the
MMS south.





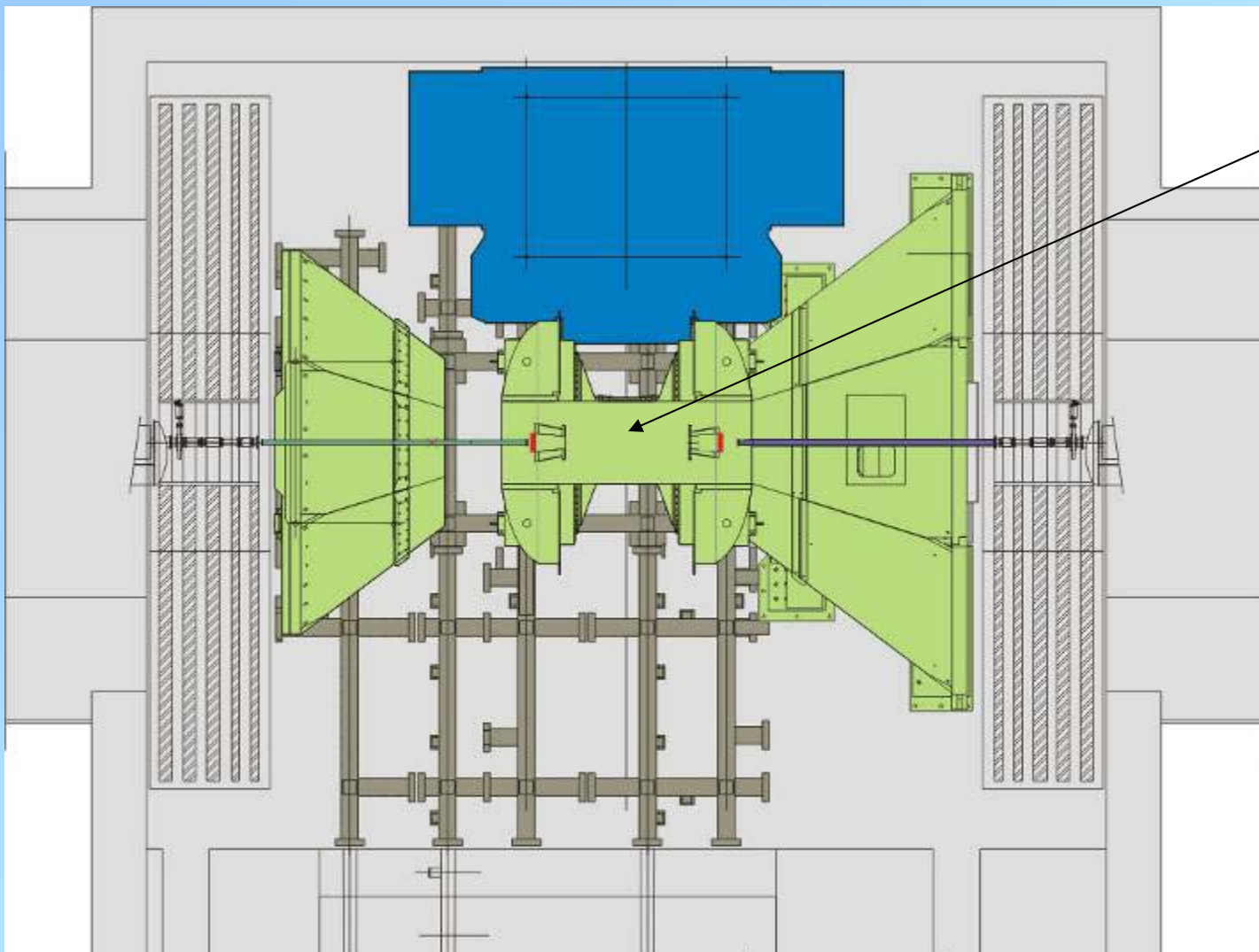
Step 6

Move the CM south.



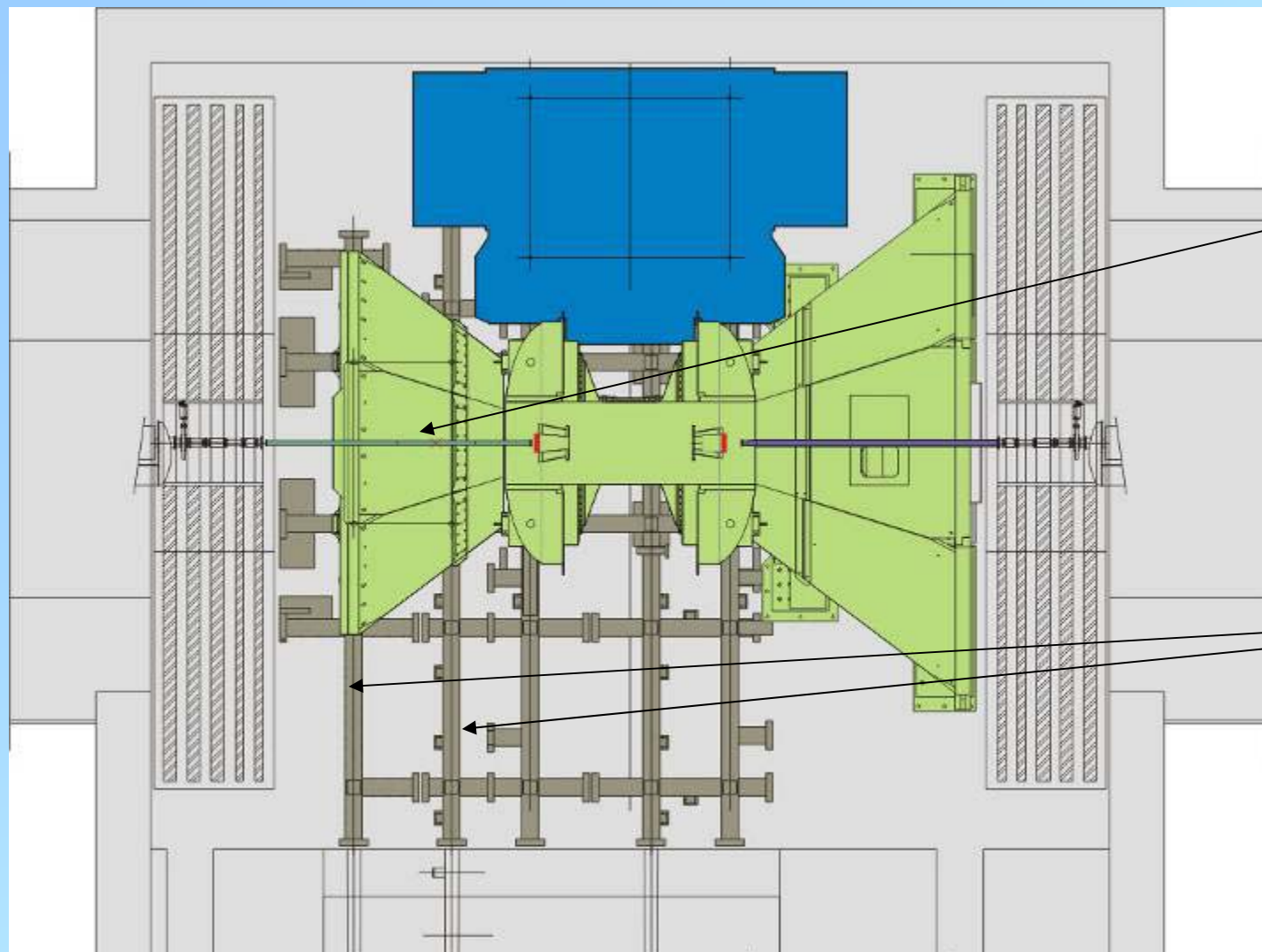
Step 7

Slide the
current
Be/SS bp
from CM to
MMS



Step 8

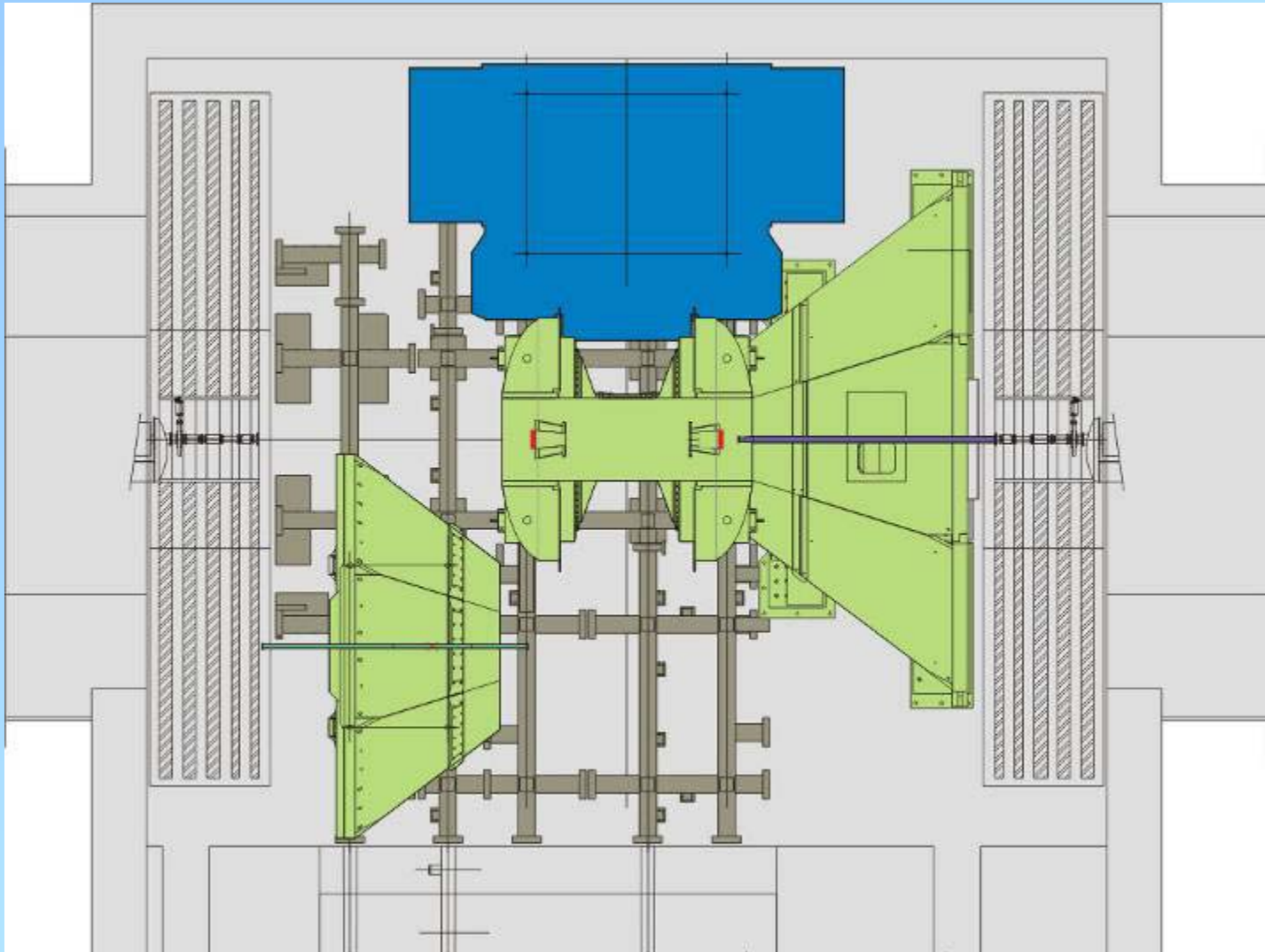
Move the
CM back to
the run
position



Step 9

Position the MMS for move to AH and disconnect services to MMS

MMS will ride out on these tracks

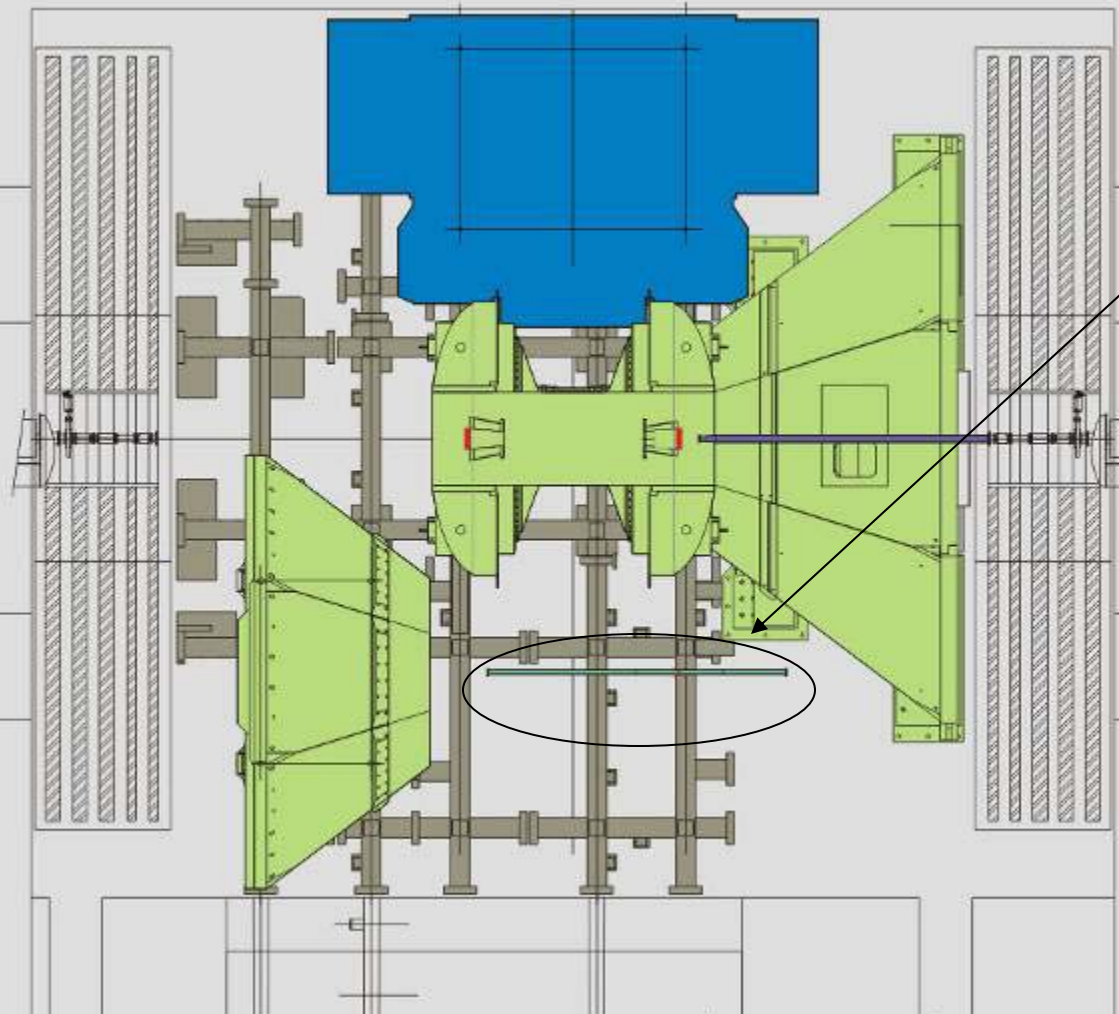


Step 10

Move MMS
east for
removal of
BeSSt BP

Step 11

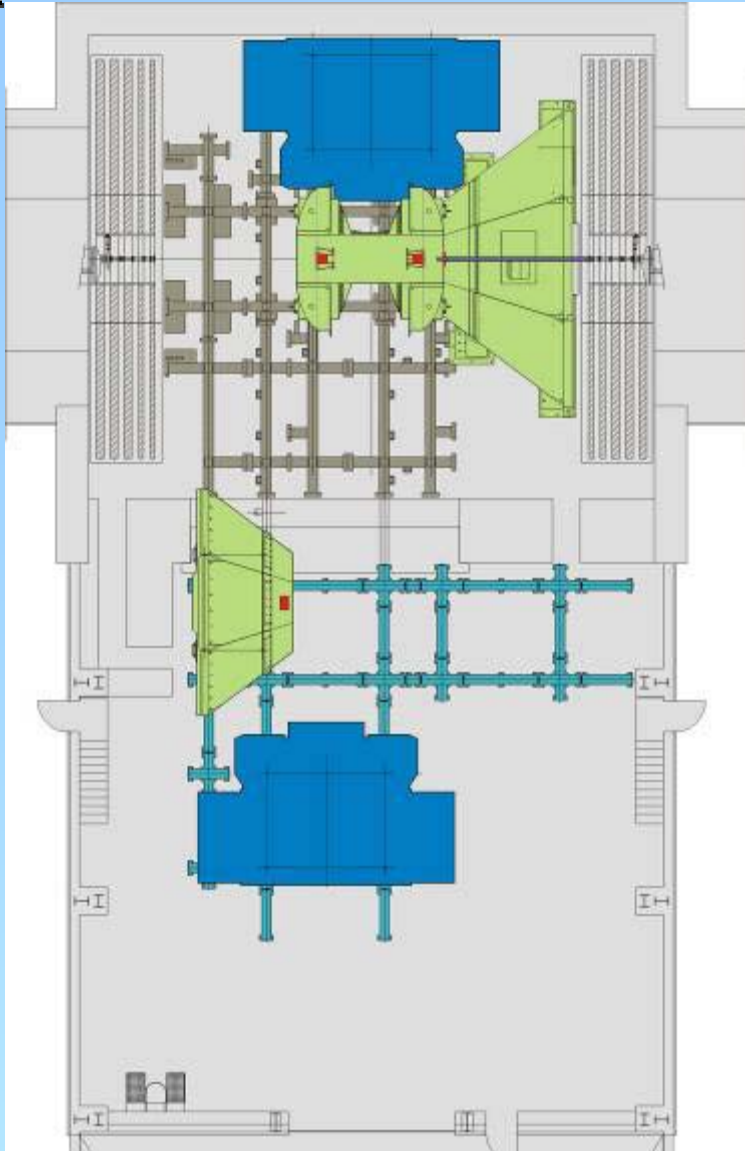
Remove Be/SSt BP



PHENIX Beampipe De-installation/Installation Choreography

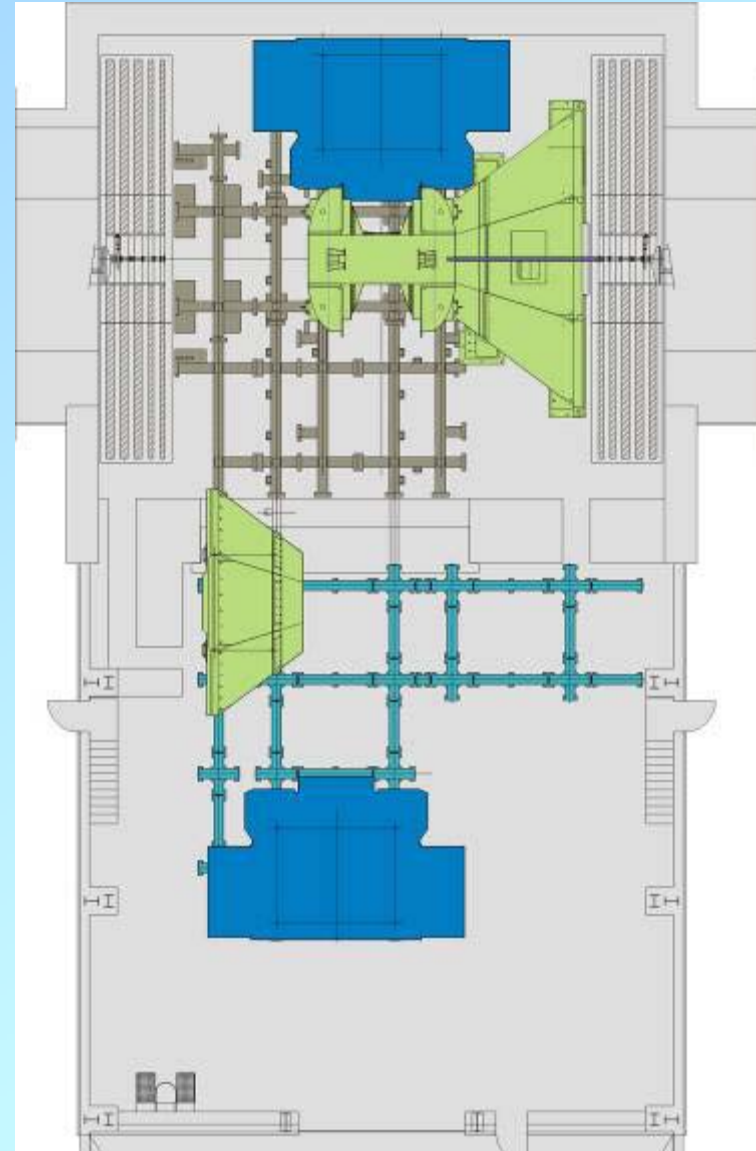
PHENIX

TECHNICAL SUPPORT NO-0

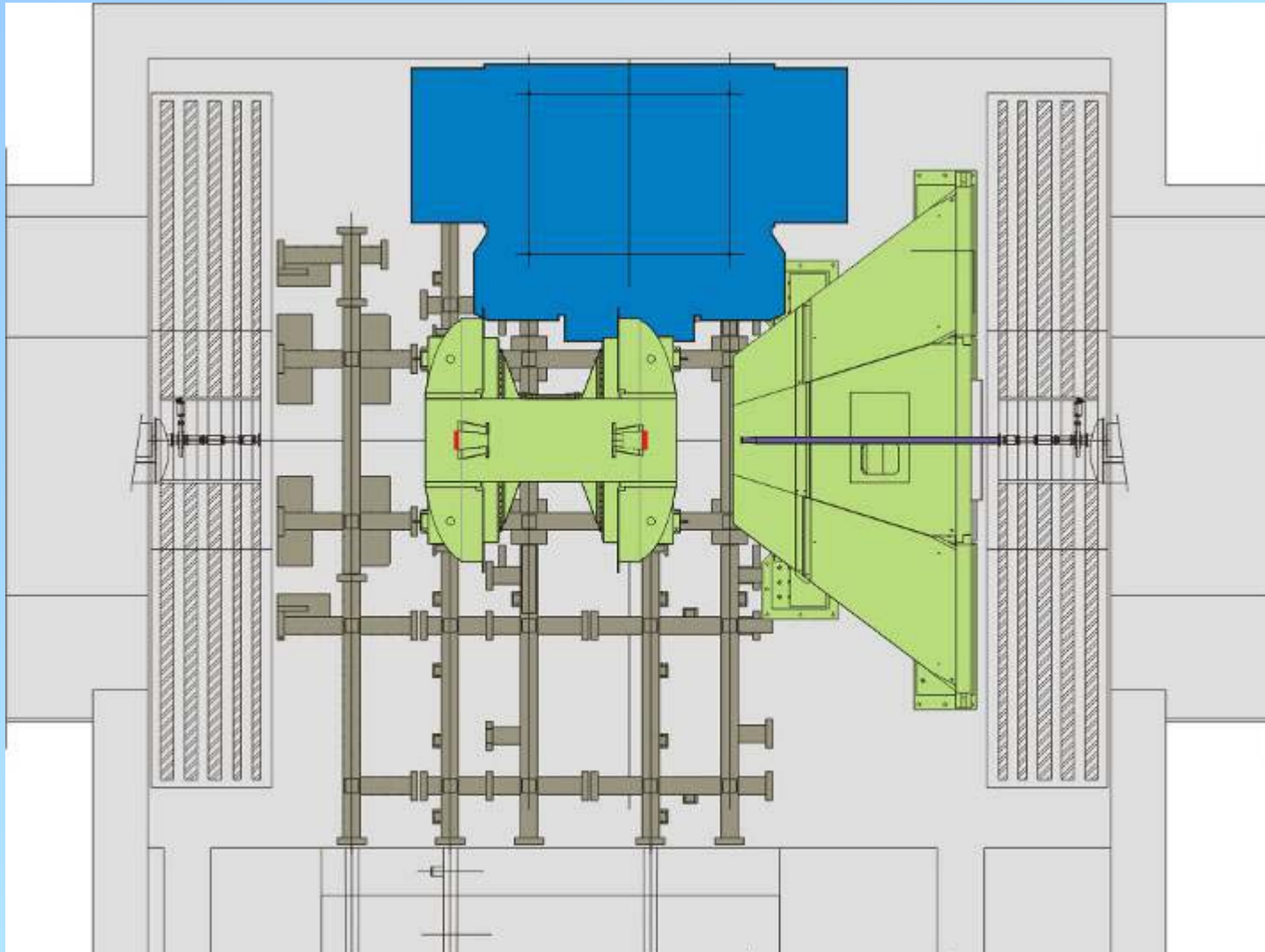


Step 12

Move the
MMS to
the AH



2/25/2010



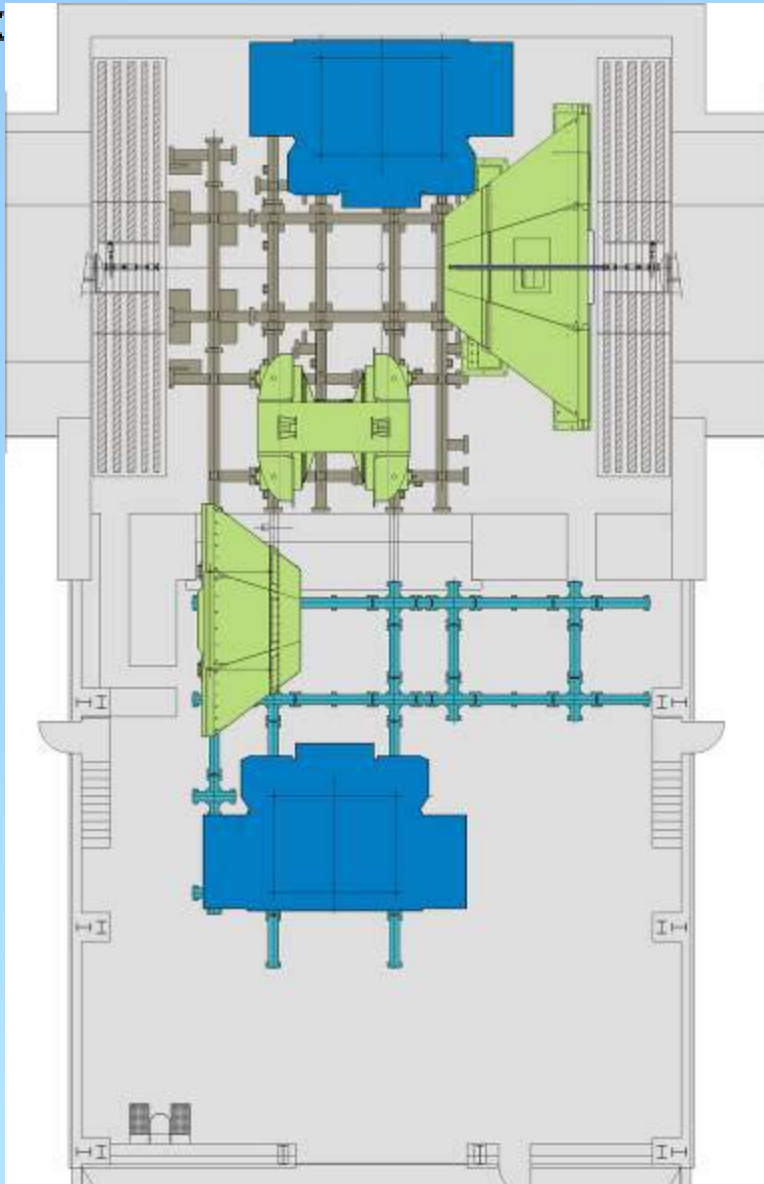
Step 13

Position CM
for move east

PHENIX Beampipe De-installation/Installation Choreography

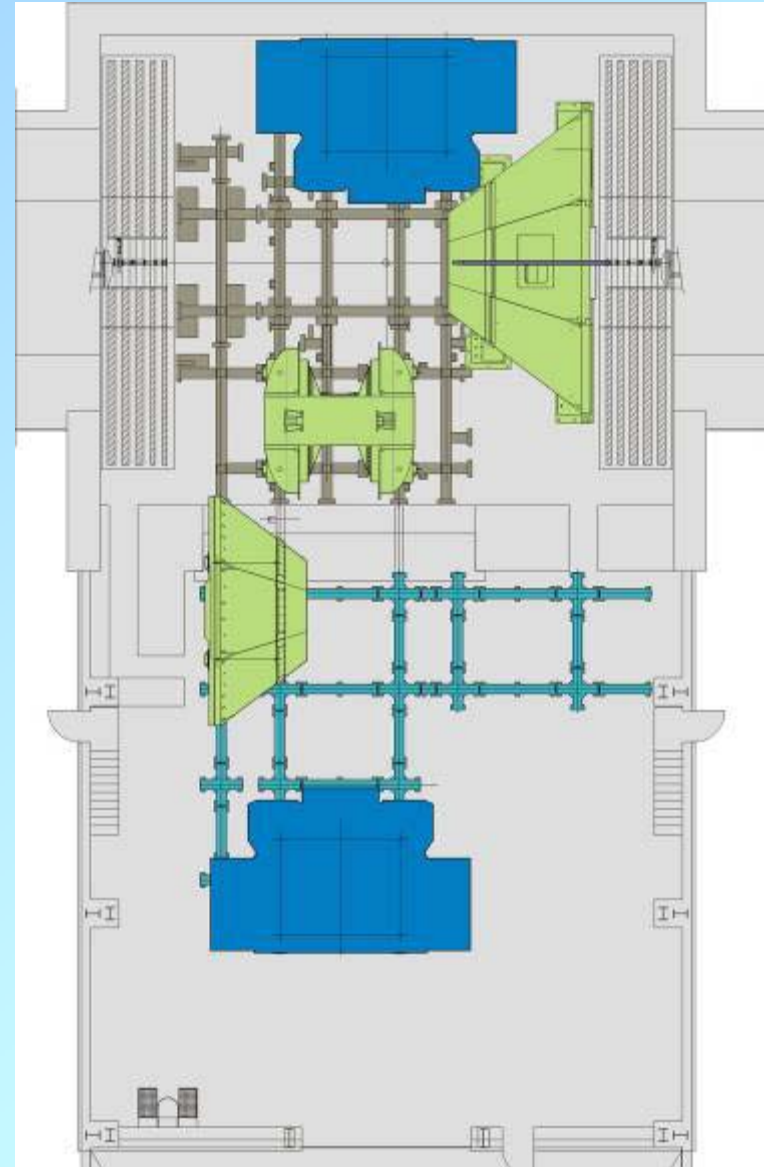
PHENIX

TECHNICAL SUPPORT NO-0

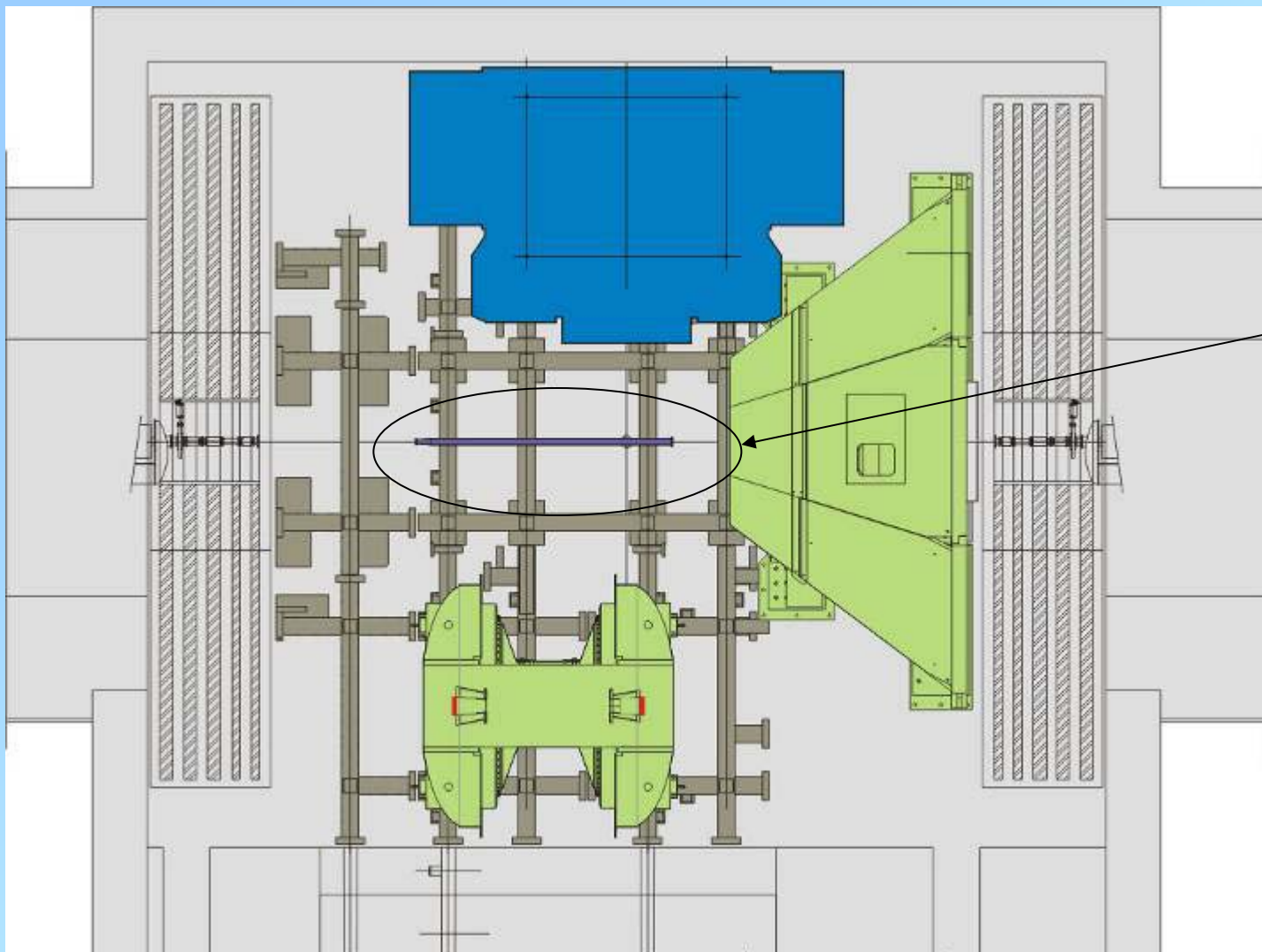


Step
14:

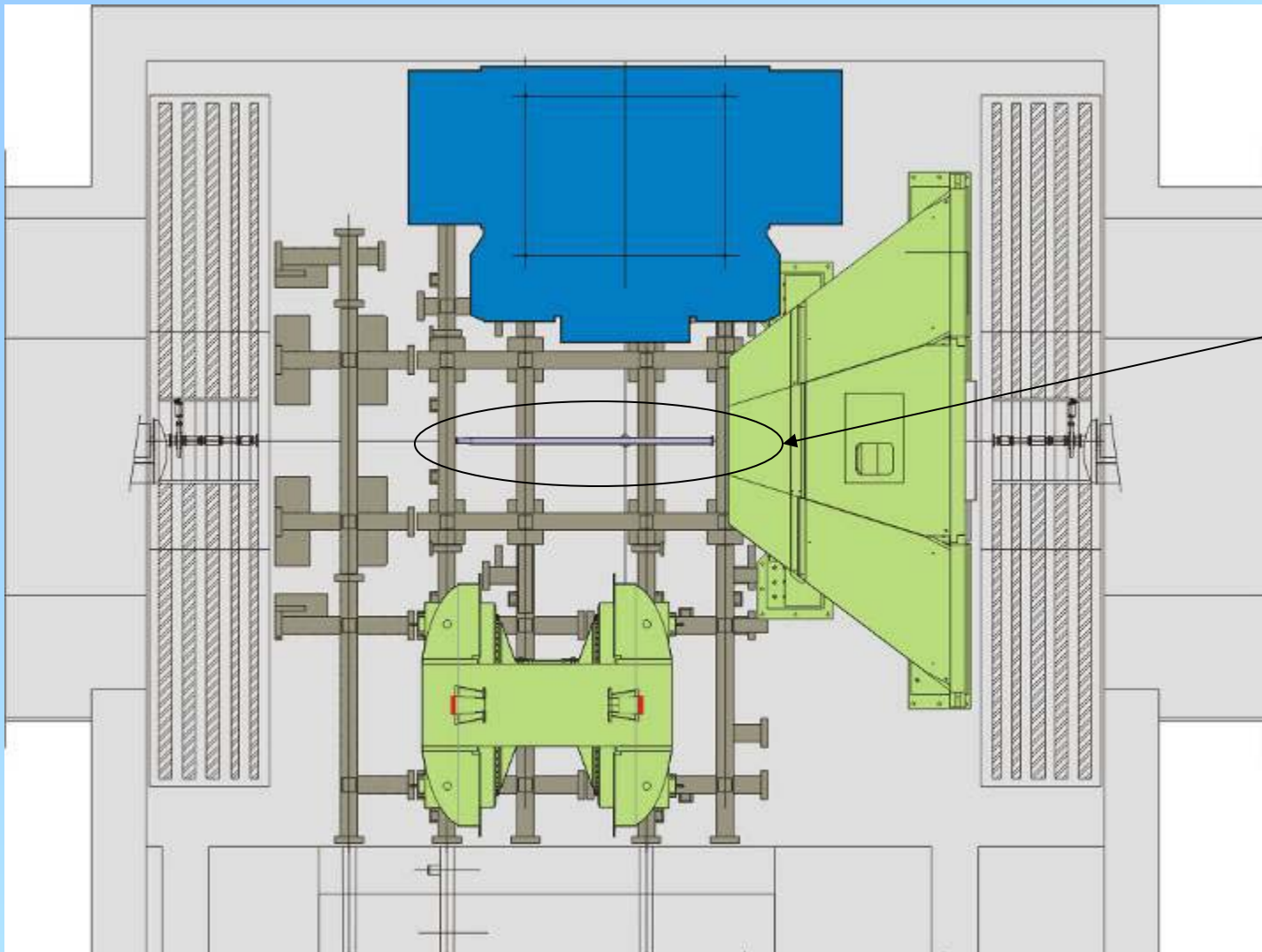
Move
CM to
east
area
of IR



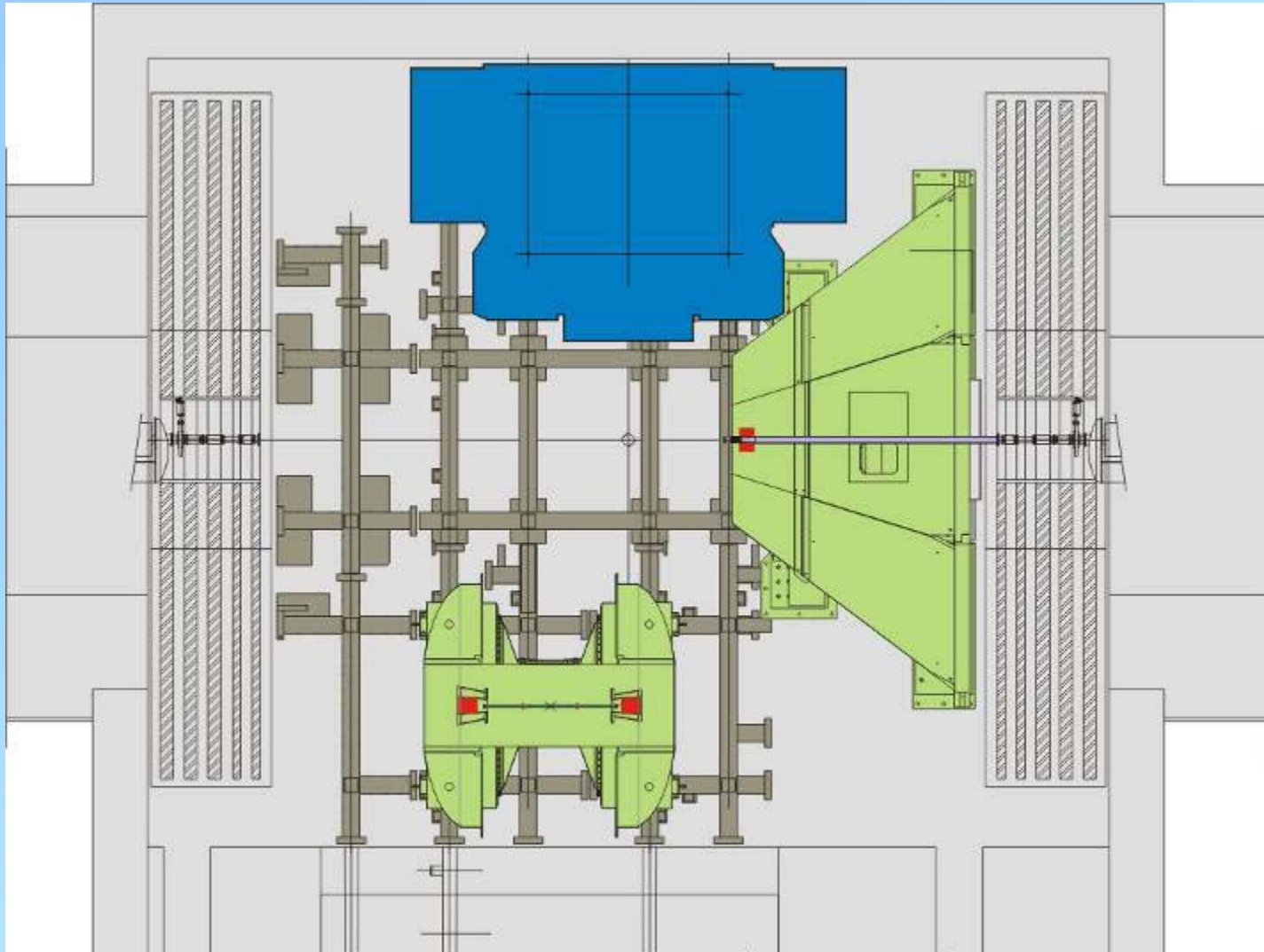
2/25/2010



Step 15:
Remove Beam
Pipe Section
from MMN

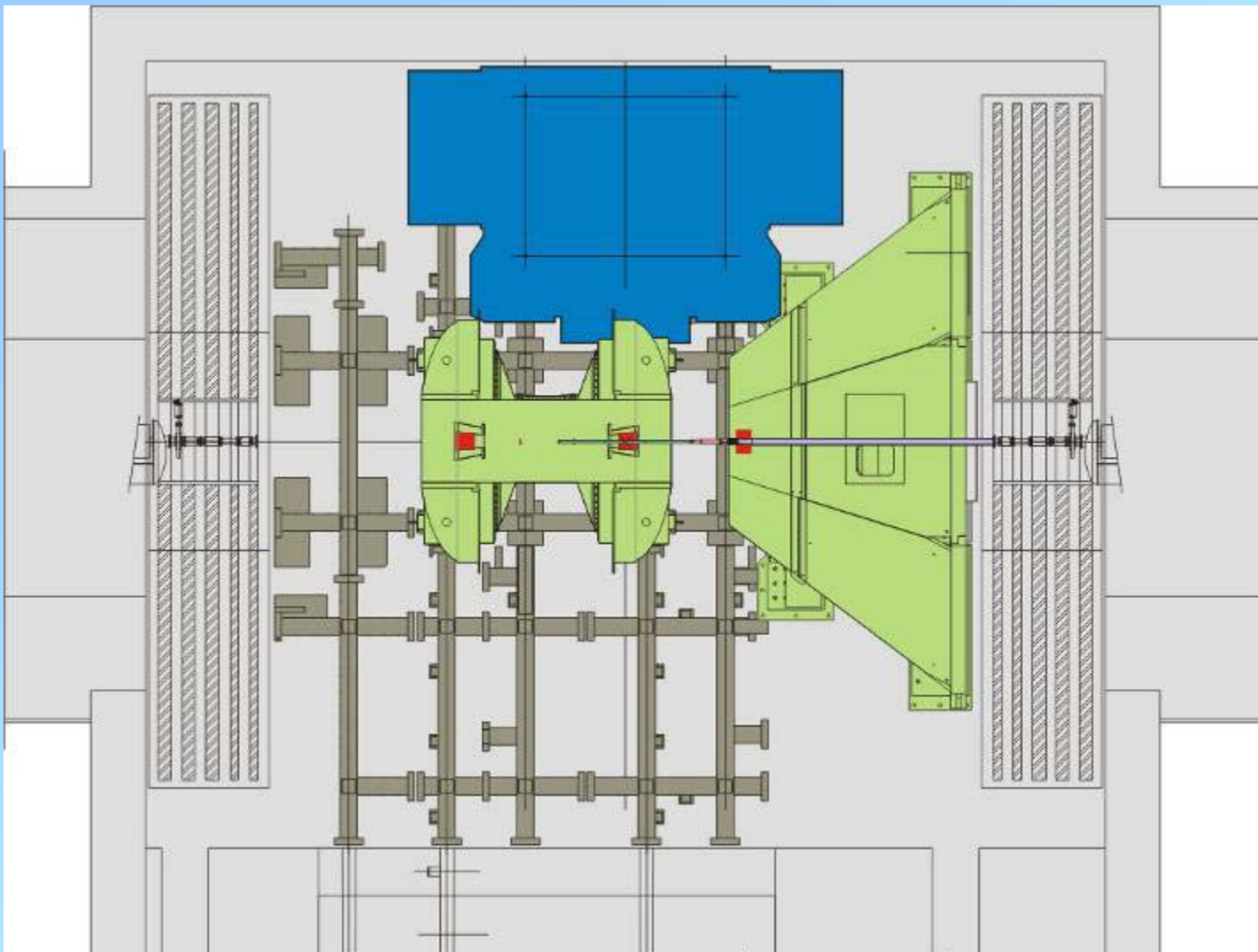


Step 16:
Install New
NEG Coated 3-
5" transition
Beam Pipe
Section in
MMN



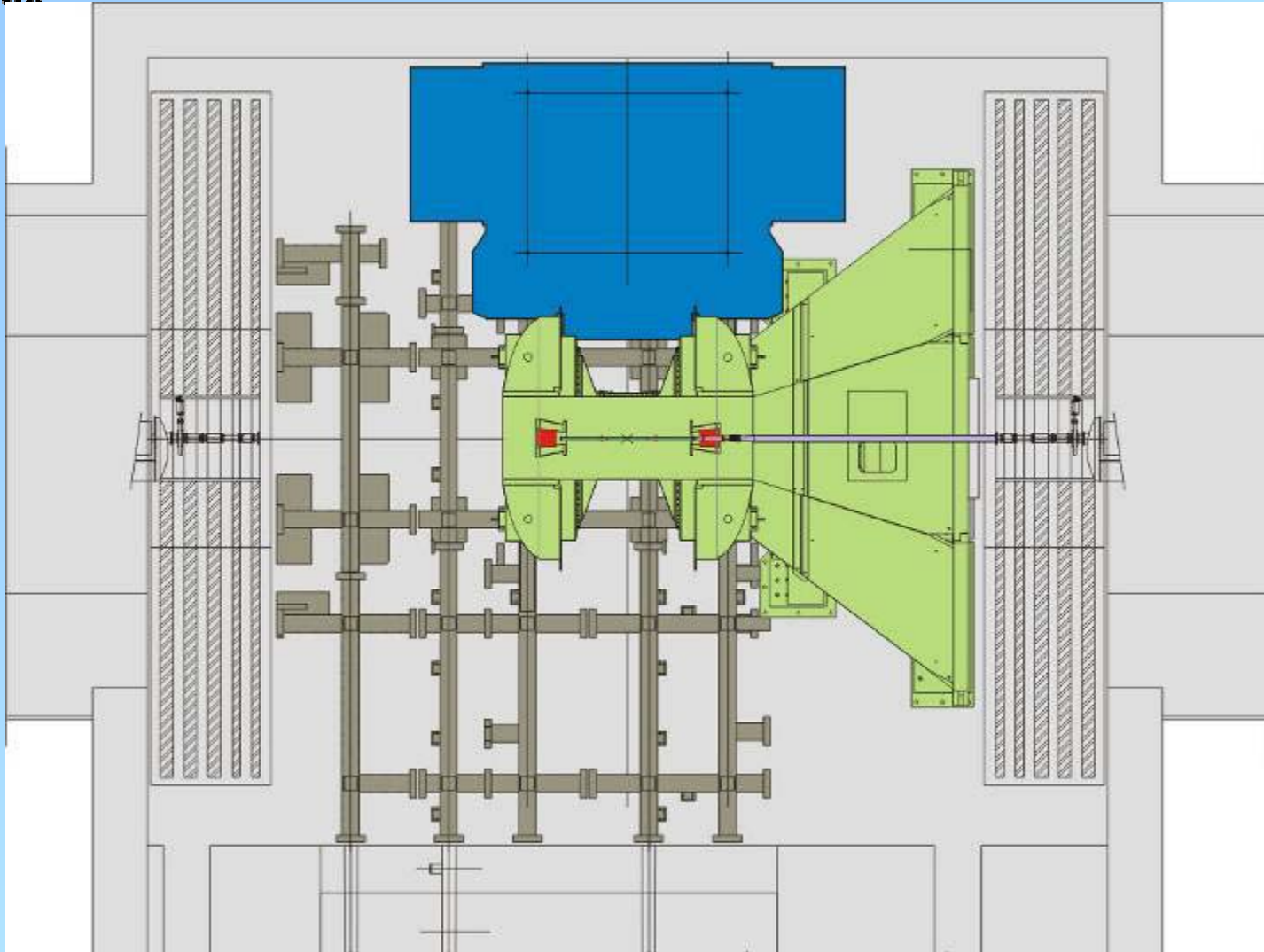
Step 17:

Install New
Be section in
CM with new
central area
rolling bp
supports in
place

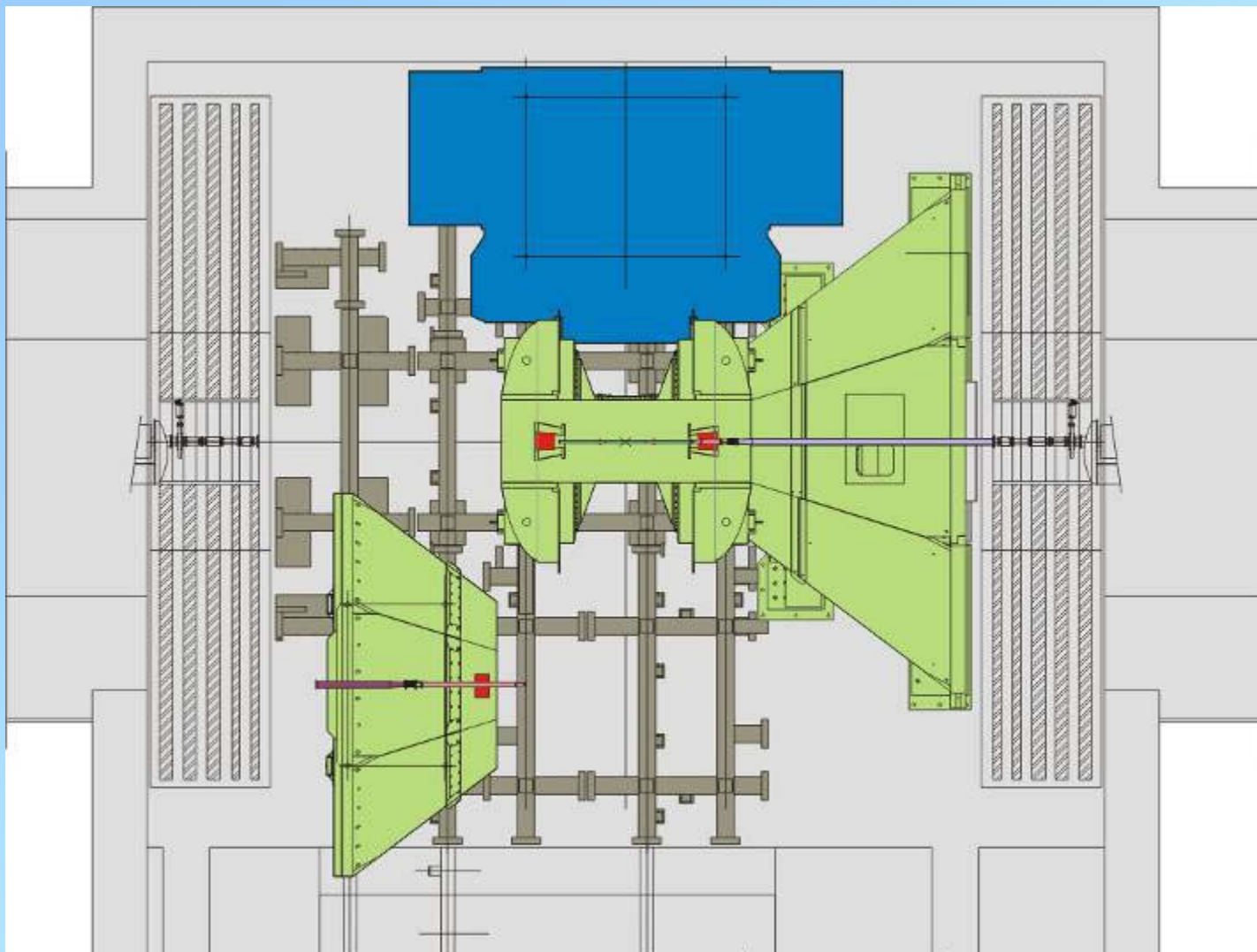


Step 18:

Move CM into beamline axis. Slide new Be section north and attach bellows and 1 5/8 to 3 transition section

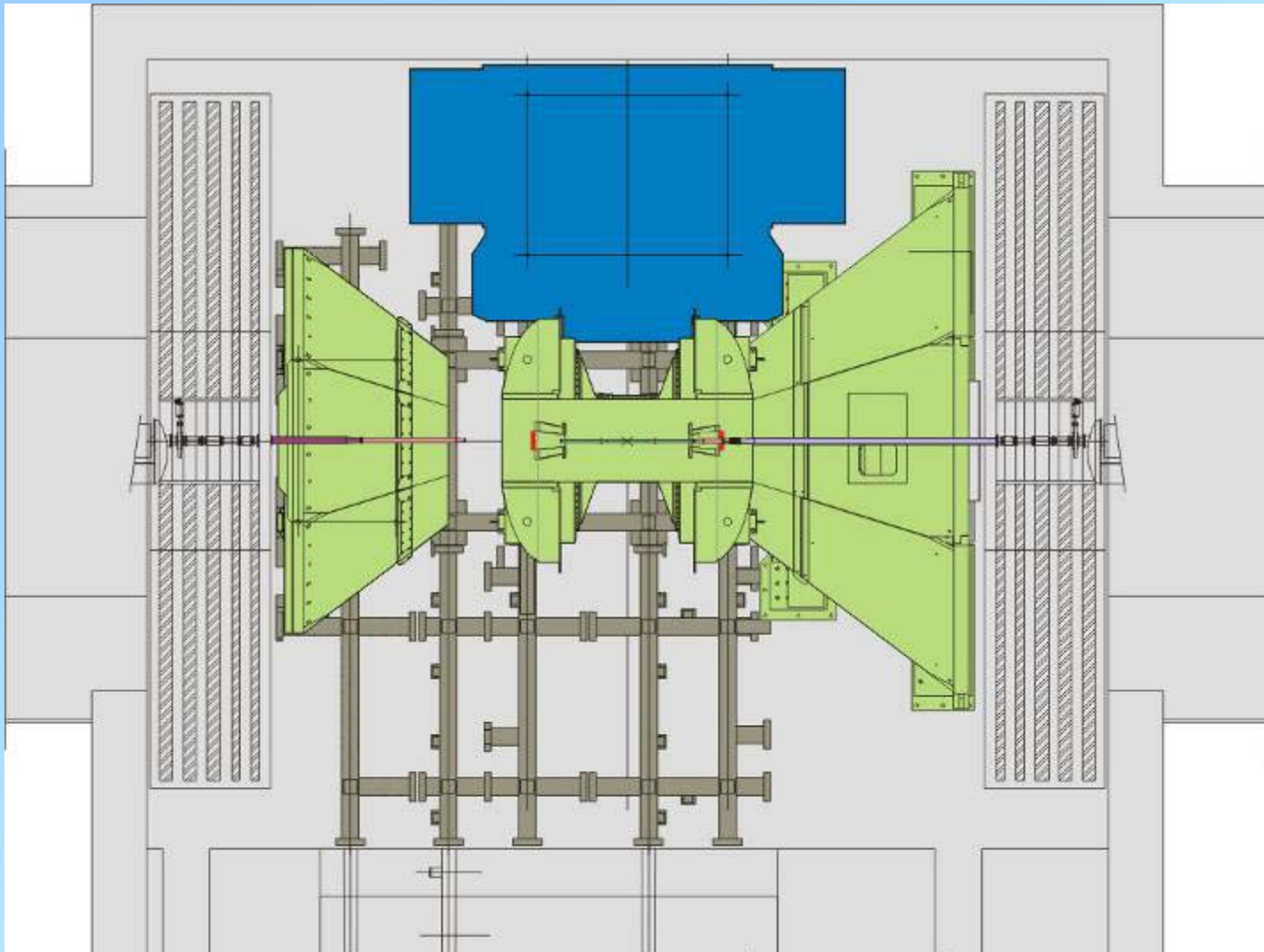


Step 19:
Move CM to
run position



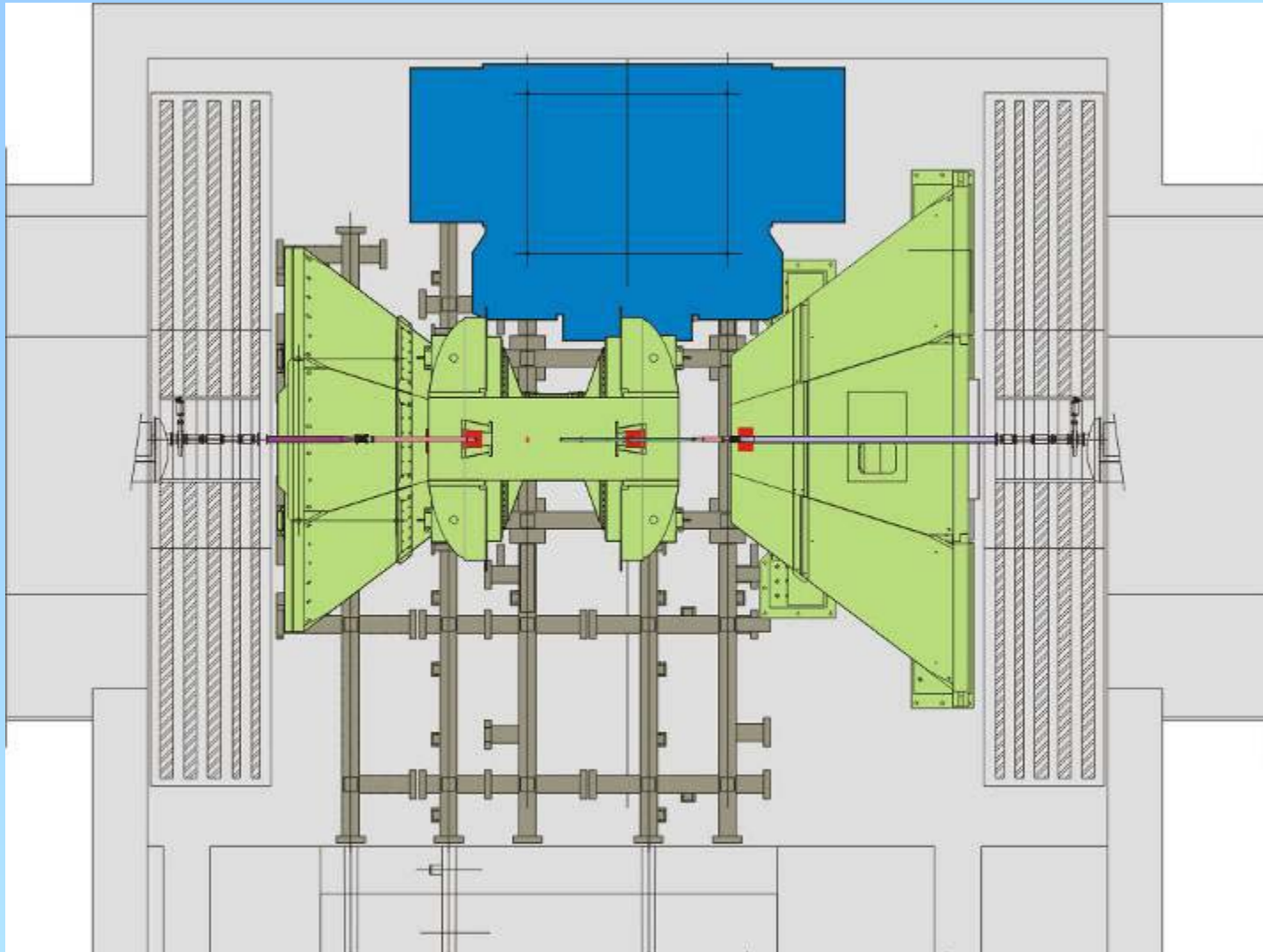
Step 20:

Move MMS into IR east area. Slide 1 5/8 to 3" transition, Bellows & 3 to 5" section into MMS



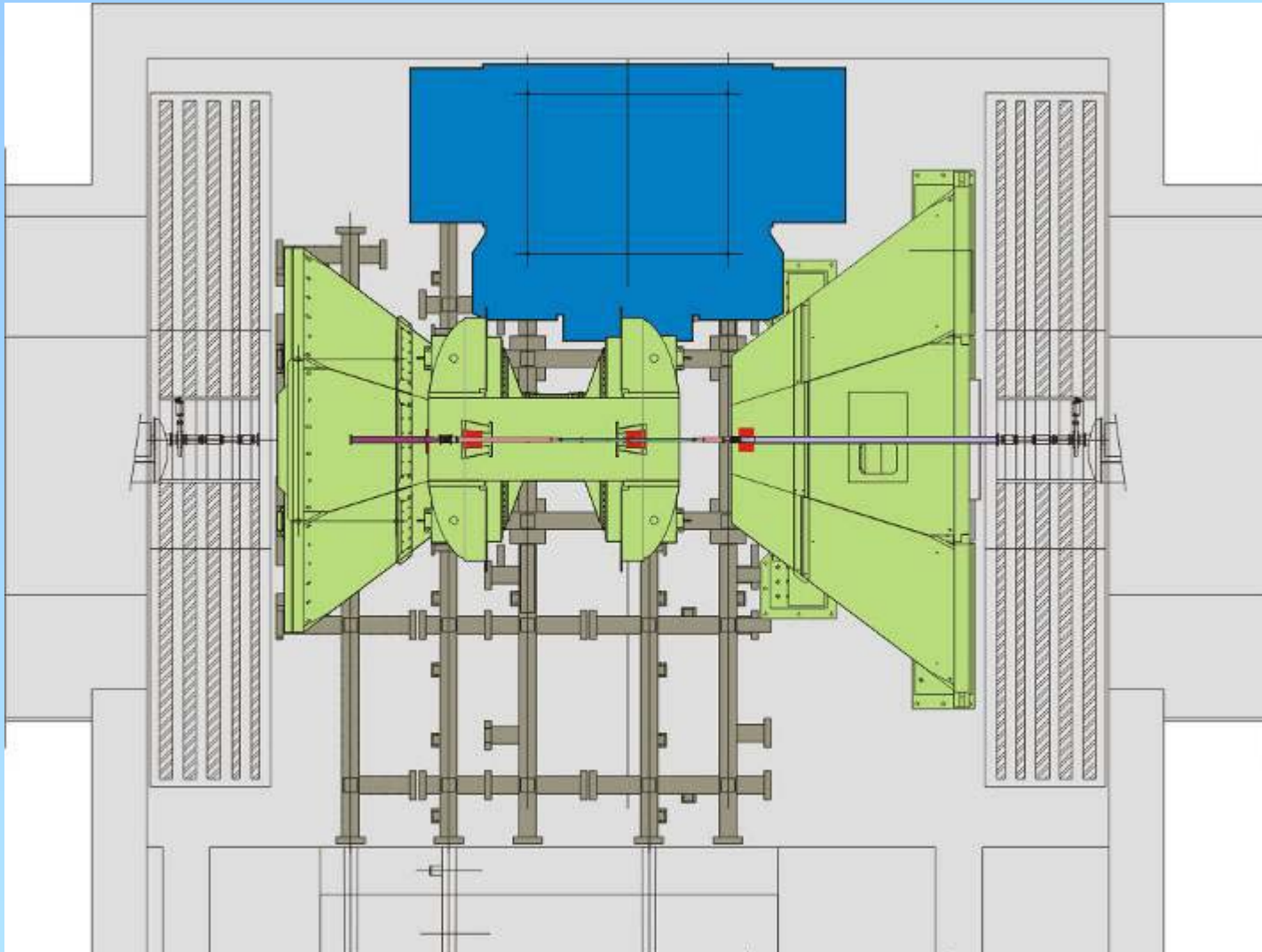
Step 21:

Move MMS to
beamline axis
then retract to
south position.



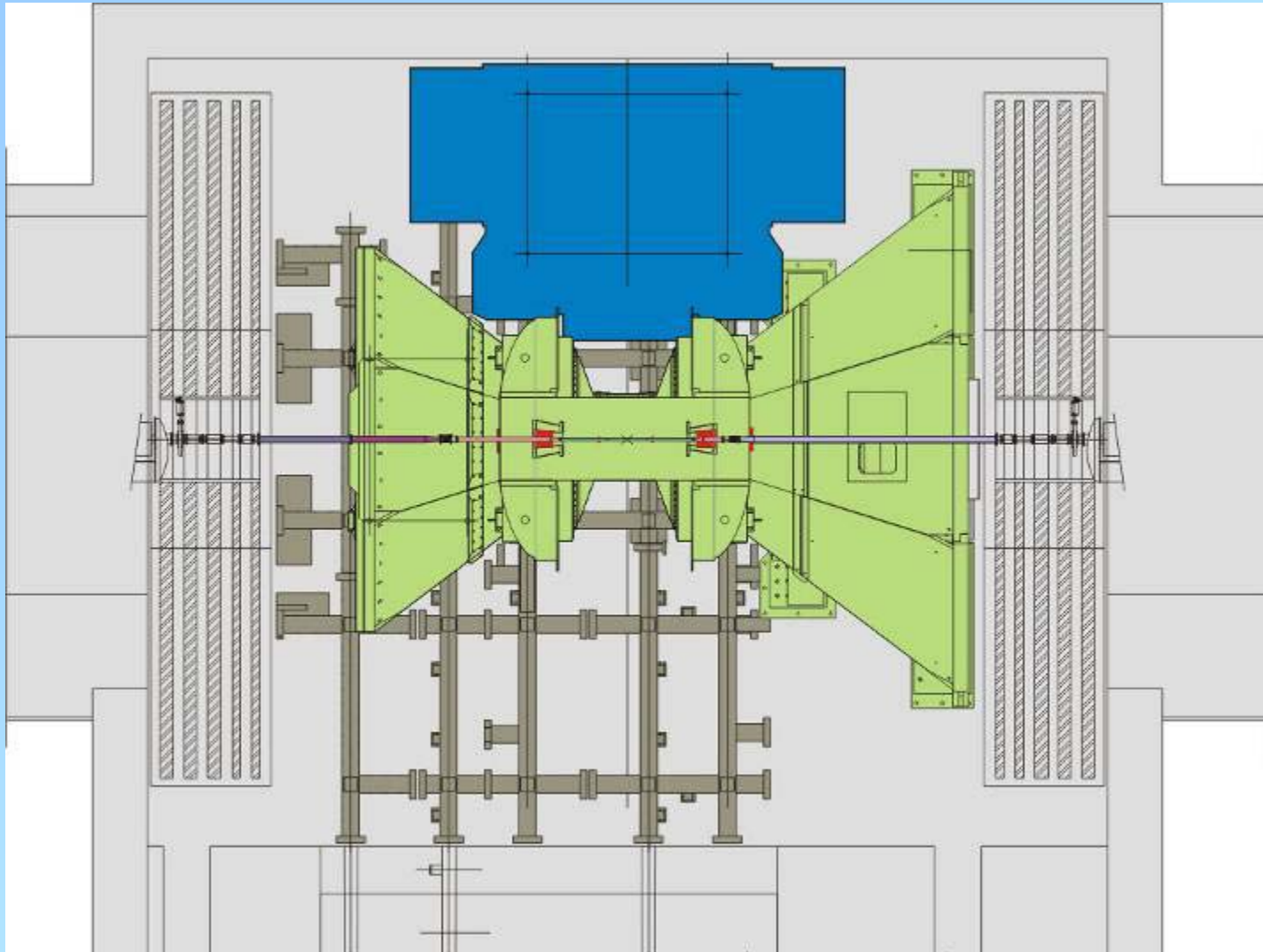
Step 22:

Move CM
south



Step 23:

Slide MMS
Beam Pipe
sections
past Cu
nosecones
and attach
New Be
section



Step 24:

Move MMS
and CM into
Run position
- Attach
last section
behind
MMS

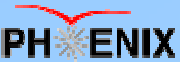
Move the MMS south and align the beampipe.

After the new beampipe, spool, transitions and bellows are all in place connected and pumped down to vacuum, the new sections shall be baked to 200°C for a period of 7 days?

After bakeout the entire new beampipe assembly shall be leak tested.

After leak test, re-install the north and south BBC and MPC detectors.

VTX Installation, VTX Services and Electronics



TECHNICAL SUPPORT 2010

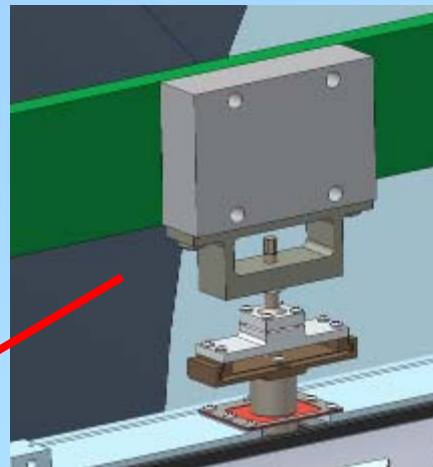
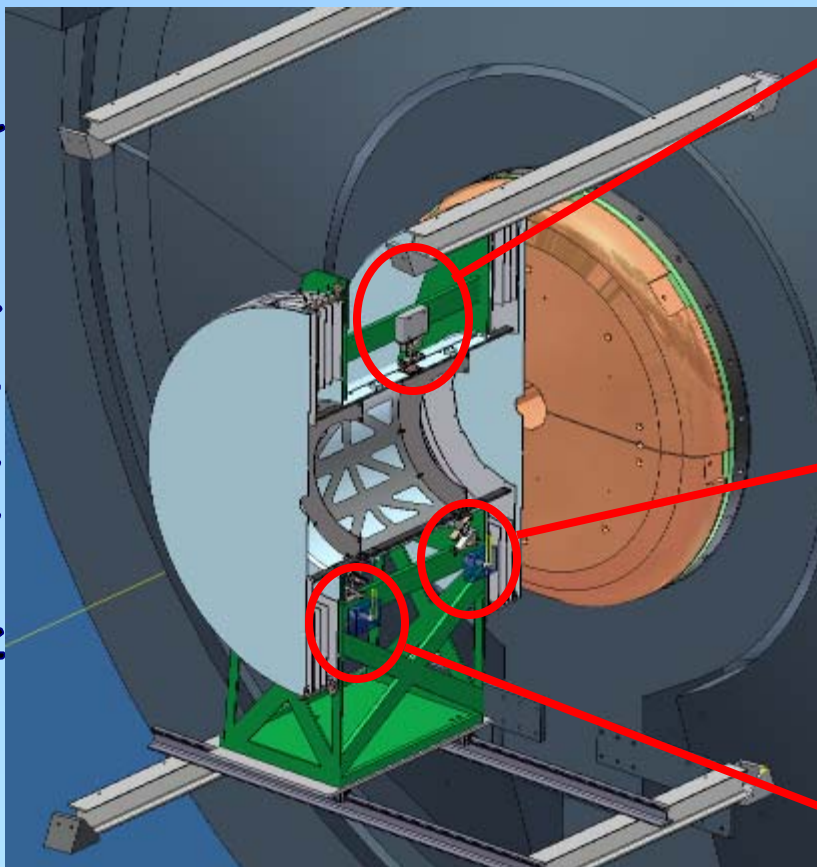
<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Install and align VTX rail attachment hardware to CM	8/27/2010	Install during bakeout? →
Install and align VTX rails parallel to beam line	9/3/2010	→
Install and align VTX rails perpendicular to beam line	9/3/2010	→
Install and align west half detector module	9/10/2010	→
Install and align east half detector module	9/17/2010	→
Install mechanical support structures for VTX services and electronics	10/1/2010	Concurrent Effort →
Install Cable trays	10/1/2010	→
Install racks	10/1/2010	→
Install chiller	10/1/2010	→
Install cables, plumbing	10/1/2010	→
Connect cables and plumbing	10/1/2010	V →
Test and commission	11/1/2010	↓

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VTX Installation Plan

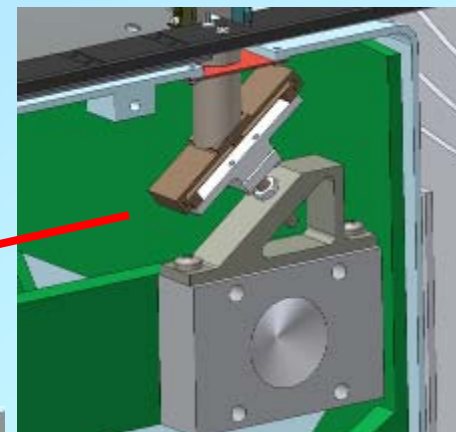
TECHNICAL SUPPORT 2010

Kinematic mounts for mating east and west detector halves

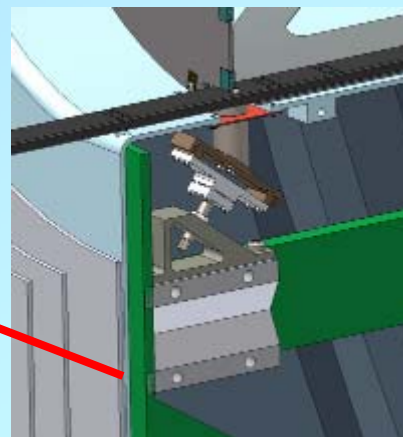


2 DOF (Y & Z)

0 DOF



6 interface points
w/ HYTEC



1 DOF (Z)

RPC3 South Prep, Early Shutdown

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Remove wiring, walkovers, FCAL and scintillator hardware that would otherwise interfere with installation	6/4/2010	PHENIX →
Remove/relocate shielding	6/11/2010	Riggers →
Remove crystal palace & vapor barrier	6/18/2010	CAD →
Inspect Gap 5 south for legacy items/problems	6/25/2010	→
Address legacy items/problems as convenient prior to shutdown start	7/2/2010	→
4th of July Holiday	7/6/2010	→
Install lighting & relocate sensors as necessary	7/20/2010	Electrician →
Temporarily relocate, re-position or otherwise address interfering piping, cable trays	7/21/2010	PHENIX (w/ CAD Help?), Electrician →
Remove RPC prototype	7/21/2010	→
Pre-survey $\frac{1}{2}$ octant reference points	7/28/2010	Surveyors →
Drill and tap $\frac{1}{2}$ octant and rotating piston mounting points	7/30/2010	→
Build/install access and work platforms for walk on top of MuID steel including stairs from MMS eyebrow	8/4/2010	Carpenters →
Final cleaning and prep of gap 5 for grouting	8/6/2010	→
Pre-installation orientation meeting with masons and riggers	8/5/2010	→
Position lifting equipment in tunnel	8/6/2010	Riggers →
Move east and west base structures into south tunnel and assemble on east and west sides of pedestal respectively. Include translation control fixtures	8/6/2010	Riggers & PHENIX techs →





2/25/2010

RPC3 South Installation

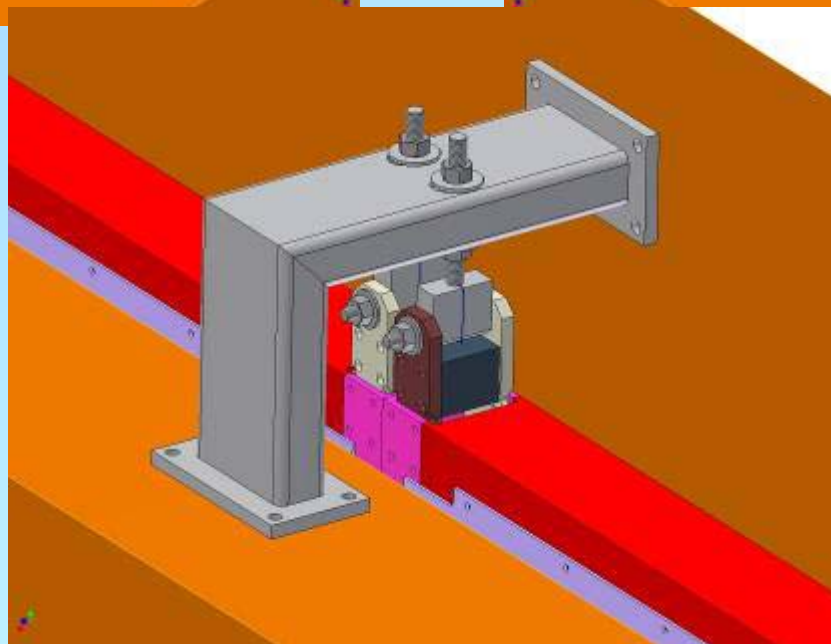
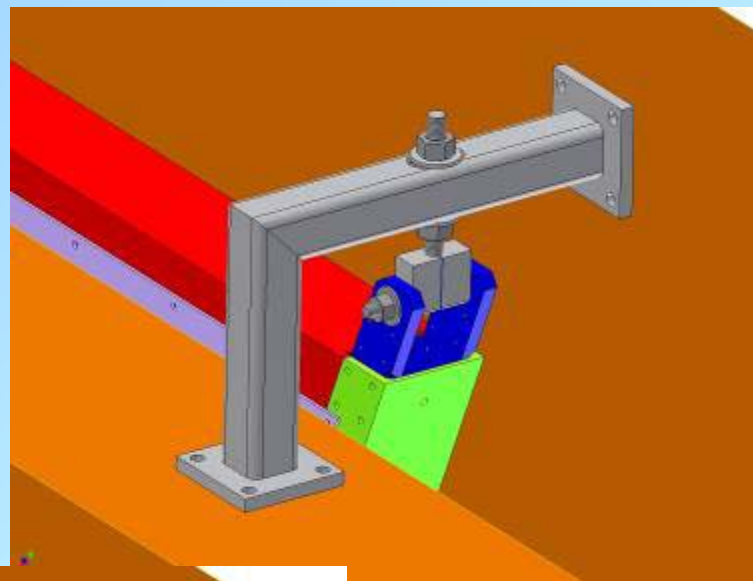
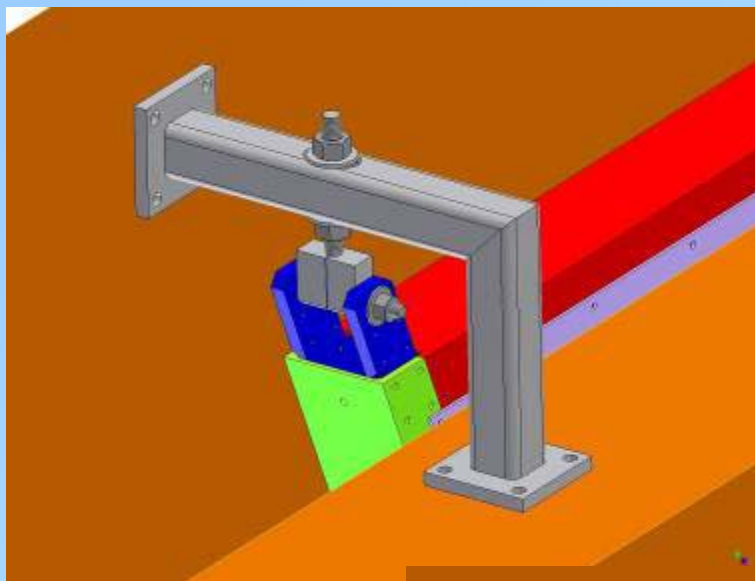
TECHNICAL SUPPORT 2010

Task	Due By	NOTES
Install and align base structures on east and west sides of gap 5	8/11/2010	
Prepare for grouting	8/12/2010	
Install grout	8/13/2010	
Install pitch control rails on pedestal and gap 5 east & west inner walls	8/27/2010	
Install upper suspension support hardware	8/31/2010	
Install $\frac{1}{2}$ octants, 2 at a time in accordance with work plan/work permit		
<i>Transport $\frac{1}{2}$ octants 2 at a time from RPC factory to south tunnel on angled transport carts</i>		
<i>Transfer $\frac{1}{2}$ octants from angled transport carts one at a time to temporary free standing and re-orienting roller fixture (fore and aft wheels and axel)</i>		
<i>Lift (and re-orient if appropriate) $\frac{1}{2}$ octant and install into base structure, previously installed $\frac{1}{2}$ octant or upper suspension hardware as appropriate per work plan</i>		
<i>Pre-align each $\frac{1}{2}$ octant as installed</i>		
<i>Perform electrical integrity tests before proceeding to next pair of $\frac{1}{2}$ octants</i>		
<i>After all $\frac{1}{2}$ octants are in place and tested, join east and west halves of full south station 3 detector and align to survey markers</i>		
	9/10/2010	Riggers & PHENIX Techs

2/25/2010

RPC3 South Installation Plan

TECHNICAL SUPPORT NO-0



2/25/2010

RPC3 South Integration

TECHNICAL SUPPORT NOTES

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
Final survey	9/17/2010	Surveyors
Install new cable trays and piping supports	9/30/2010	Electrician, earlier if possible
Re-install MuID wiring and pipes	9/30/2010	
Re-install MuID gas rack	9/30/2010	
Install south thermal/vapor barrier	10/15/2010	CAD
Re-install shielding	10/29/2010	Riggers
Commissioning and final acceptance tests	10/29/2010	RPC Group
Install RPC3 HV, LV and signal wiring and gas lines	10/31/2010	
Install RPC3 South gas distribution rack	10/31/2010	
Install RPC3 South environmental controls (heaters and thermostats)	10/31/2010	Electrician

2/25/2010

Shutdown 2010 Other Work

TECHNICAL SUPPORT NO-O

<u>Task</u>	<u>Due By</u>	<u>NOTES</u>
RPC3 North unfinished business	7/15/2010	Electronics and cabling, grounding issues, environmental controls
MuTrigger FEE unfinished business	7/15/2010	MMS cable trays, →
RHIC Summer Sunday Tour	8/15/2010	During bakeout →
Other subsystem maintenance and repair	10/1/2010	TBD →
Gas System maintenance, repair, upgrade	10/1/2010	→
Bridge Electrical support upgrade	10/1/2010	Support for 4 full racks in 2010, 4 more (8 total) in future →
PHENIX Infrastructure maintenance, repair, upgrade	10/1/2010	TBD →
Rack Room upgrade	10/1/2010	TBD →
Future upgrade support	11/1/2010	RPC1, RPC absorbers, FVTX, FOcal, other TBD →
DC/PC maintenance/repair	10/15/2010	FEM and wire troubleshooting and repairs, major efforts will require longer shutdon →
Prepare for Run 11	10/31/2010	Normal end of shutdown tasks, typically taking 3-4 weeks →

2009 Building Maintenance Issues

TECHNICAL SUPPORT 2010

- Roof leaks in utility bathroom at northwest corner behind tech offices, over door between rack room and assembly hall and over door between control room and elect. ass'y room.
- General maintenance for Trailer Offices (in progress)
- Trailer Office Modifications planning in progress
- New roof leaks in laser room and IR (southeast corner)



147 Procedures Identified

- 82 Made Inactive (not currently in use, will require revision to re- activate if and when necessary, available for reference purposes)
- 12 CAD procedures relevant to PHENIX, all are current and up-to- date.
4 currently under review, 1 has been revised waiting for approval, 1 proposed for deletion waiting for approval. (11.2.3 Flammable Gas OPS and Safety system bypass procedure under review) 3 more review due in Feb.

42 PHENIX approved procedures.

1 is currently under review
39 are current and up-to-date

11 Proposed/Draft Procedures (never previously formalized)

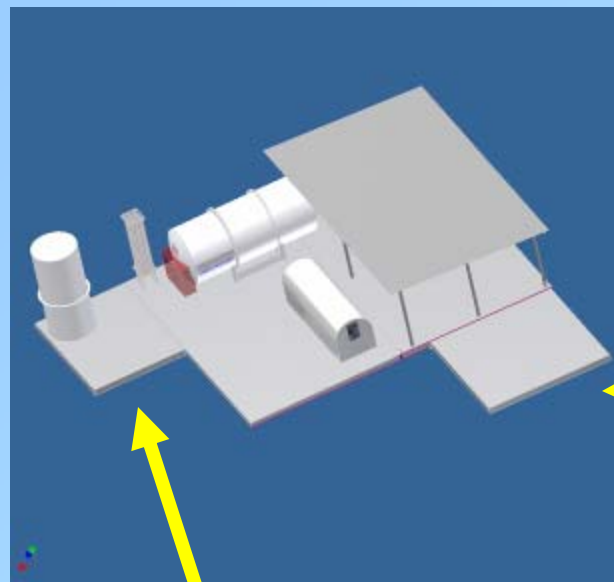
New Spreadsheet Tracking Application to keep track of Procedure revisions and updates - Done and Working

Web retrieval of latest procedures now available from PHENIX Internal:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_procedures.htm

New Argon Dewar and Empty Gas Bottle Storage Area

PHENIX



Pad for
Empty Gas
Bottles



Pad for argon
Dewar



TECHNICAL SUPPORT 2010

2/25/2010

1. Possible snow tonite into tomorrow: Check 344-INFO before coming in for delayed opening , etc.
2. ESS&H, OSH assessments at CAD going on this week into next week.
3. As we prepare and plan for this summer's long and involved shutdown, keep an eye out for legacy items that may not be in compliance with current lab standards. Report them to Carter or me and we will attempt to get the addresses by appropriate organization. If it seems unsafe, let's get it fixed.
4. Adobe software license compliance review next week. Check your computer for legacy ADOBE software (e.g. acrobat writers, readers are OK). If you find unlicensed software please delete it. Get help from ITD if necessary.
5. FLSA (Fair Labor Standards Act) settlement meeting tomorrow for techs recently changed from EXEMPT to non exempt. Tomorrow 11:00 AM to noon.

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

2/25/2010

Where To Find PHENIX Engineering Info

As February comes to an end we say goodbye to:

Black History Month
American Heart Month
Marfan Syndrome Awareness Month
National Time Management Month
Library Lovers Month
Plant The Seeds Of Greatness Month
National Weddings Month
National Parent Leadership Month
National Youth Leadership Month
Aggressive Driving Month
Workplace Eye Safety Month
Burn Awareness Month

(National Engineers Week was last week)



Links for the weekly planning meeting slides, archives of past meeting slides, long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm

2/25/2010